STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 177-72

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1972 SEASON

DECEMBER 1973

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

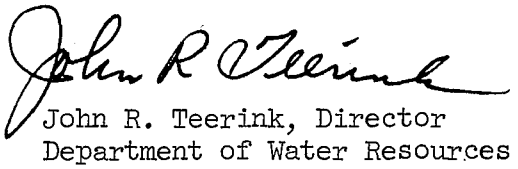
RONALD REAGAN
Governor
State of California

JOHN R. TEERINK
Director
Department of Water Resources

FOREWORD

Bulletin No. 177-72 discusses the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1972 watermaster season. Authority to prepare this report is described in the California Water Code, Division 2, Part 4, Chapter 7.

The bulletin is presented in two parts. The first part contains general information about water rights, water supply, service areas, and watermaster duties. The second part contains descriptions of the 17 active service areas, the basis of the service in each area, methods of distribution and the specifics of the 1972 watermaster season, including streamflow in the various service areas, and other significant information.



John R. Teerink, Director
Department of Water Resources
The Resources Agency
State of California
January 21, 1974

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor
NORMAN B. LIVERMORE, JR., Secretary for Resources
JOHN R. TEERINK, Director, Department of Water Resources

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Boles Creek	Shasta River	111-113			16,16b	119,121
Bowlin Creek	N.F. Pit River				13f	97
Brockman Slough	Susan River				19c	171
Brown Creek	Surprise Valley				18a	151
Burney Creek	Burney Creek	21	8			
Butte Creek	Ash Creek	11,12			2	13
Butte Creek	Butte Creek	25	9,10	26,27	5	29
Campbell Lake	Shackleford Creek	107			15	109
Cantrall Creek	N.F. Pit River				13f	99
Canyon Creek	Burney Creek				4	23
Canyon Creek, N.	Indian Creek (See North Canyon Creek)					
Carrick Creek	Shasta River	111-113			16,16d	119,123
Cedar Creek	Cow Creek	31,32			6,6a	34,35
Cedar Creek	S.F. Pit River				17	134
Cedar Creek	Surprise Valley	142	49	145	18e	155
Center Canal	S.F. Pit River				17,17d	134,138
Cleland Springs	Shasta River	113			16h	127
Cliff Lake	Shackleford Creek	107			15	109
Clover Creek	Cow Creek	31,32			6,6e	34,39
S. Clover Creek	Cow Creek				6e	39
Cold Stream	M.F. Feather River	61			11e	69
Cooks Creek	Indian Creek	56			10b	59

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N.F. Cottonwood	N.F. Cottonwood Cr.	77	19	78	12	79
Cottonwood Creek	N.F. Pit River	81-83	21	85	13a	92
Cow Creek	Cow Creek	31			6	34
N. Cow Creek	Cow Creek	31,32	12	33	6,6a	34,35
N.F. Cow Creek	Cow Creek				6	34
Couch Creek	N.F. Pit River				13e	96
Davis Creek	N.F. Pit River	81,82	22	85	13b	93
De Sabla Reservoir	Butte Creek	25				
Deep Creek	Surprise Valley	142			18f	156
N. Deep Creek	Surprise Valley	142	50	145	18f	156
S. Deep Creek	Surprise Valley	142	51	146	18f	156
Deep Cut	Susan River				19d	173
Dicen Slough	M.F. Feather River				11b	66
Digger Creek	Digger Creek	41	13	42	7	43
Dill Slough	Susan River	161			19e	174
Doby Creek	N.F. Cottonwood Cr.				12	79
Dorris Reservoir	S.F. Pit River				17a	135
Duck Lake Creek	French Creek	45	14	46	8	47
Dwinnell Reservoir	Shasta River	111,113	35,36	116,117	16f	125
Eagle Creek	N.F. Cottonwood Cr.				12	79
Eagle Creek	Surprise Valley	139,142	54	147	18i	159
Eagle Creek	Susan River				19	168
Eagle Lake Canal	Susan River				19f	175
E.Branch Soldier Cr.	Surprise Valley (See Soldier Creek)					
East Channel	M.F. Feather River (See Little Last Chance Creek)					
Eastside Canal	S.F. Pit River				17,17d	134,138
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Feather River						
Middle Fork	M.F. Feather River	61,62	18	63	11,11i	64,73
West Branch	Butte Creek (Import)	25				
Fitzhugh Creek	S.F. Pit River	129,131	42	133	17,17b	134,136
N.F. Fitzhugh Cr.	S.F. Pit River				17b	136
S.F. Fitzhugh Cr.	S.F. Pit River				17b	136
M.F. Fitzhugh Cr.	S.F. Pit River				17b	136
Fletcher Creek	M.F. Feather River	61,62			11k	75
Flood Channel	Susan River				19e	174
Franklin Creek	N.F. Pit River	81,82	24	86	13d	95
French Creek	French Creek	45,46			8	47
North Fork	French Creek	45,46			8	47
French Reservoir	S.F. Pit River	131			17	134
Frenchman Reservoir	M.F. Feather River	62				
Gleason Creek	N.F. Pit River	82			13g	98
Gold Run Creek	Susan River	161-163	57	165	19c	171
Hahn Channel	Hat Creek				9	51
Hamlin Creek	M.F. Feather River	62			11j	74
Hartson Slough	Susan River	161			19,19e	168,174
Hat Creek	Hat Creek	49	15	50	9,9c	51,54
Hendricks Canal (Also known as Toadtown Canal, import)	Butte Creek	25	11	27		
Highrock Creek	Surprise Valley				18	149
Hills Creek	Susan River	161				
Hog Flat Res.	Susan River	162	60	167	19	168
Horse Range Creek	French Creek	45,46			8	47
Indian Creek	Indian Creek	55,56	16	56	10,10c	57,60
Jerusalem Creek	N.F. Cottonwood Cr.	77			12	79
Joseph Creek	N.F. Pit River	81,82	26	87	13e	96
Juniper Creek	Big Valley				3	19
Kanavel Creek	Susan River				19c	172
Lake Leavitt	Susan River	162,163			19c	171

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Lake Shastina	Shasta River (See Dwinnell Reservoir)					
Lassen Creek	Susan River	161			19,19b	168,170
Last Chance Creek	M.F. Feather River (See Little Last Chance Creek)					
Lights Creek	N.F. Pit River	81,82	24	86	13c	94
Little Branch	Surprise Valley (See Mill Creek)					
Little Cow Creek	Cow Creek (See Cow Creek, North)					
Little Last Chance	M.F. Feather River	61,62			11a	65
East Channel	M.F. Feather River				11a	65
North Channel	M.F. Feather River				11a	65
Little Shasta R.	Shasta River	111,113	37	117	16h	127
Little Truckee Div.	M.F. Feather River	61,62	17	63	11e	69
Little Truckee R.	M.F. Feather River (Import)	61,62				
Lower Shasta River	Shasta River (See Shasta River)					
Martin Creek	N.F. Pit River				13f	97
McCoy Flat Res.	Susan River	161-163	60	67	19	168
Meadow Creek	French Creek				8	47
Meeks Creek	French Creek				8	47
Middle Channel	M.F. Feather River (See Smithneck Creek)					
M.F. Feather R.	M.F. Feather River (See Feather River)					
M.F. Fitzhugh Cr.	S.F. Pit River (See Fitzhugh Creek)					
M.F. No. Cow Cr.	Cow Creek (See Cow Creek)					
Mile Creek	N.F. Pit River				13g	98
Mill Creek	Cow Creek				6a,6d	35,38
Mill Creek	Shackleford Creek	107			15	109
Mill Creek	S.F. Pit River	129,130			17	134
Mill Creek	Surprise Valley	141	46	143	18a	151
Little Branch	Surprise Valley				18b	152
West Mill Cr.	Surprise Valley				11j	74
Miller Creek	M.F. Feather River	62			11j	74
Milkhouse Creek	M.F. Feather River				11j	74
Miners Creek	French Creek	45			8	47

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Moon Creek	N.F. Cottonwood Cr.	77			12	79
Morris Slough	M.F. Feather River				11b	66
Murphy-Estep Br.	Cow Creek				6d	38
Negro Creek	N.F. Pit River				13h	99
New Pine Creek	N.F. Pit River	81,82	21	85	13a	92
North Bear Creek	N.F. Pit River				13b	97
North Canyon Cr.	Indian Creek				10a	58
North Channel	N.F. Pit River (See Franklin Creek)					
North Channel	M.F. Feather River (See Little Last Chance Creek)					
North Channel	Surprise Valley (See Pine Creek)					
North Cow Creek	Cow Creek (See Cow Creek)					
North Deep Creek	Surprise Valley (See Deep Creek)					
N.F. Cottonwood C.	N.F. Cottonwood Creek (See Cottonwood Creek)					
N.F. Davis Creek	N.F. Pit River (See Davis Creek)					
N.F. French Creek	French Creek (See French Creek)					
N.F. Pit River	N.F. Pit River (See Pit River)					
Oak Run Creek	Cow Creek	31,32			6,6d	34,38
Old Channel	Hat Creek				9a	52
Old Channel	Surprise Valley				18i	159
Onion Creek	M.F. Feather River	61			11e	69
Owl Creek	Surprise Valley	139,142	52	146	18g	157
Parker Creek	Susan River	161-163			19d	173
Parker Creek	N.F. Pit River	81,82	31	90	13h	99
Parks Creek	Shasta River	111,112	34	115	16e	124
Payne Reservoir	S.F. Pit River	139			17,17b	134,136
Paynes Lake Creek	French Creek	45,46			8	47
Perry Creek	M.F. Feather River				11e,11f	69,70
Peters Creek	Indian Creek				10b	59
Pine Creek	Pine Creek	103	32	104	14	105
Pine Creek	S.F. Pit River	129,130	43	133	17,17a	134,136
Pine Creek	Surprise Valley	141	48	144	18d	154
North Channel	Surprise Valley				18d	154
South Channel	Surprise Valley				18d	154

Watermaster Service Areas in Northern California

Source Name	Service Area	References: Text Page	Flow Data: Table	Flow Data: Page	Map: Figure	Map: Page
South Deep Creek	Surprise Valley (See Deep Creek)					
S.F. Davis Creek	N.F. Pit River (See Davis Creek)					
S.F. Digger Creek	Digger Creek (See Digger Creek)					
S.F. Pit River	S.F. Pit River (See Pit River)					
Spring Brook	M.F. Feather River				11j	74
Spring Channels	M.F. Feather River	62			11k	75
Spring Creek	Burney Creek				4	23
Susan River	Susan River	161-163	56,58	165,166	19,b,c	168,70,71
Tanner Slough	Susan River	161			19,19e	168,174
Thoms Creek	N.F. Pit River	81,82	28	88	13f	97
Toadtown Canal	Butte Creek (See Hendricks Canal)					
Town Creek	M.F. Feather River				11e,11f	69,70
Truckee R., Little	M.F. Feather River, Import (See Little Truckee Diversion)					
Tule Canal	Susan River				19e	174
Turner Canyon	M.F. Feather River				11j	74
Turner Creek	M.F. Feather River	62			11j	74
Webber Creek	M.F. Feather River	61,62			11e	69
W. Br. Feather R.	Butte Creek, Import (See Feather River)					
W. Fork Parker C.	Susan River (See Parker Creek)					
W. Mill Creek	Surprise Valley (See Mill Creek)					
West Side Canal	M.F. Feather River	61,62			11h,11j	72,74
West Side Canal	S.F. Pit River				17,17d	134,138
West Valley Creek	S.F. Pit River	130	41	132	17c	137
West Valley Res.	S.F. Pit River	129,130			17,17c	134,137
Whitehead Slough	Susan River	161			19e	174
Willow Creek	Ash Creek	11,12			2	13
Willow Creek	Susan River	161-163	59	166	19,19f	168,175
Willow Creek	Willow Creek	175			20	177
Wimer Branch	Surprise Valley				18b	152
Wolf Creek	Indian Creek	55,56			10a	58
Wyndham Creek	Cow Creek				6e	39

INTRODUCTION

Purpose and Benefits

The primary purpose of watermaster service is to distribute water in accordance with established water rights. This is accomplished by apportioning to the rightful users the available supplies in streams which have had water right determinations.

Distribution of water in watermaster service areas is a continuing statutory function of the Department of Water Resources as provided in Part 4 of Division 2 of the California Water Code.

A major benefit of watermaster service to water users and the State is that court litigation and physical violence, which in past years occurred quite frequently, are essentially eliminated.

Under watermaster service each water right owner is assured that his rights are being protected without his having to take legal action against other users. Another important benefit results from increased use of available supplies through reduction of waste.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. The State general tax fund pays for one-half the cost of operating each service area. The water right owners in the service area pay the other one-half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code.

Determination of Water Rights

Almost all of the streams under state watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These adjudications (decrees) establish each owner's rights as to allowable rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked in relation to the rights of all other decreed owners. Under this system all rights of any one priority must be fully satisfied before water can be diverted under any lower priority rights.

Water rights determinations necessary for establishing watermaster service areas may be accomplished by "statutory adjudication", "court adjudication", "court reference", permit or license to appropriate, or agreement.

Statutory Adjudications

The California Water Code (Sections 2500-2900) contains procedures whereby water users on any stream may petition the State Water Resources Control Board, Division of Water Rights, to make a legal determination of water rights on that stream. If the Board finds that such a determination is in the public interest, it proceeds with a statutory adjudication. This adjudication ultimately results in a court decree which defines all water rights on the stream.

Court Adjudications

A less extensive method of defining water rights involves a "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of those parties named in the action and therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right owners and persons claiming riparian or

appropriative rights which were not specified in the decree.

Court Reference

The "court reference" type of adjudication arises when a civil action as discussed above is referred to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. The Board's report becomes the basis of the court's decision. As in court adjudications, a court reference determines only the water rights of the parties named in the action.

Watermaster Service Areas

Formation

Watermaster service is provided in areas where the rights have been defined by the superior court or by agreement and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of Water Resources creates watermaster service areas where these conditions exist, following either a request by the users or an order by the superior court.

The first watermaster service areas were created in September 1929. Prior to 1929, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California which are under state watermaster service. Two new service areas were created on June 22, 1972, and service began in them on July 1.

The counties and principal water sources of the various service areas in Northern California are listed in Table 1. Of these 20 areas, 18 are in the Department's Northern District. In 1972, one service area, Seiad Creek, Siskiyou County, was inactive, and two, Pine Creek, Tehama County, and Willow Creek, Siskiyou County, were created and operated for the first time.

Description of Region

The service areas are primarily in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although a considerable amount of land is used exclusively for pasturing livestock. Most irrigation is accomplished by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

A map of this region showing the 20 service areas is presented in Figure 1.

Watermaster Responsibilities

Authority

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority in accordance with established water rights. To accomplish his responsibility, the watermaster is provided authority both by the Water Code and by provisions of pertinent court decrees or voluntary agreements to physically regulate the various streams in the service area. He is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at approximately 100 to 200 diversions in one or more service areas. The frequency of visiting these diversion points increases substantially in years of short water supply.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users almost always stop. Also, the watermaster's ability to visit and set each diversion on a regular basis is greatly facilitated by good structures.

Interpretation of Decrees

The watermaster is often called upon to make immediate field or on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this he must possess a good understanding of California water rights law.

Water Supply

Water supply in the watermaster service areas is derived principally from unregulated runoff of small streams. Peak runoff, mostly snowmelt, occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow. However, state watermasters do not supervise the use of ground water in Northern California.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin 120 series, "Water Conditions in California", is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the Upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the supply and the demand for water. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

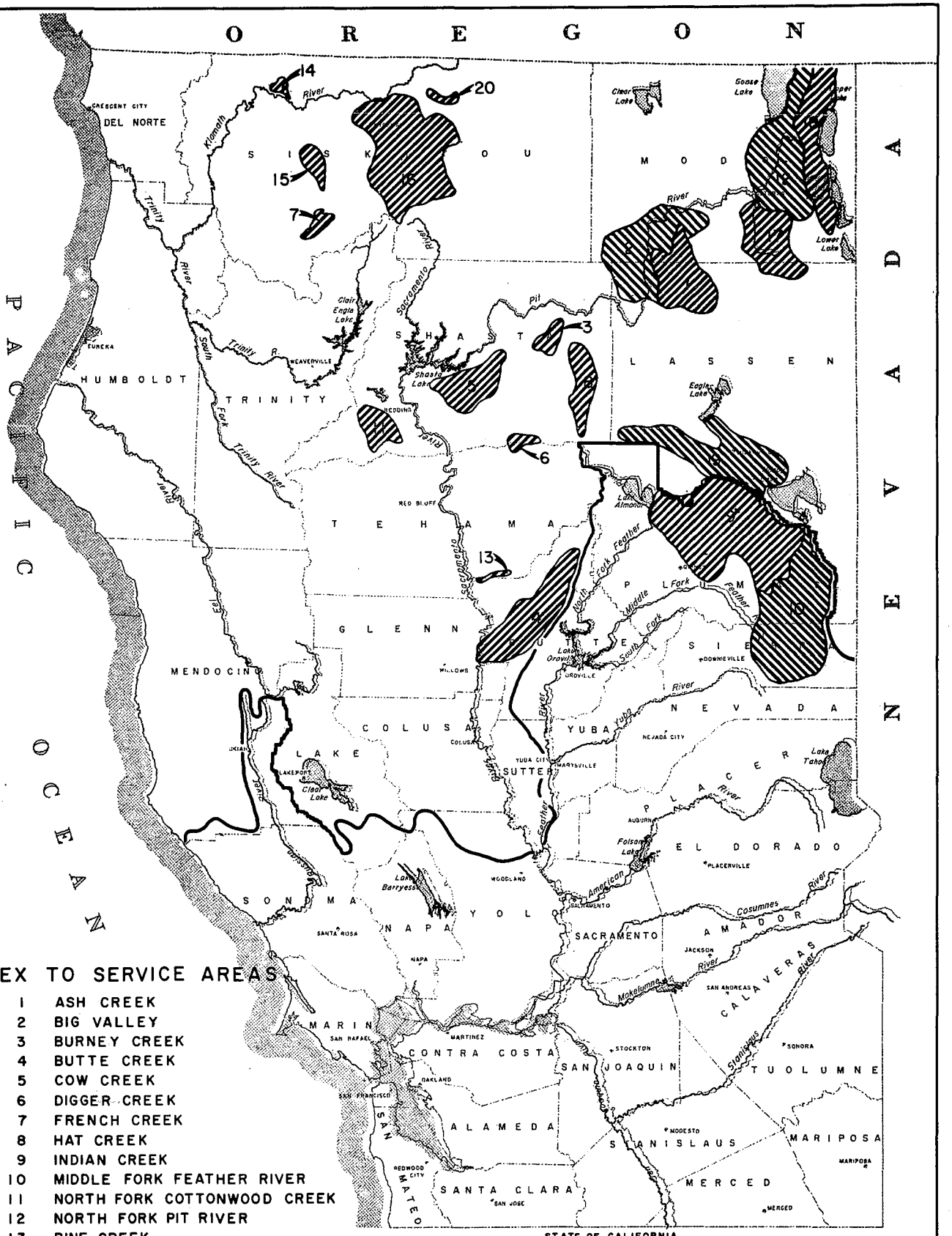
Data collected at representative snow courses showing the snowpack as of April 1, 1972, on all courses and the snowpack on May 1 and June 1 at selected courses, is presented in Table 2. This information was obtained from the Department's Bulletin 120-72.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1971-72 water year. The seasonal precipitation gives an indication of the related water supply available for distribution and provides a basis for comparing the current year's supply with a long-term average.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the

Figure 1



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STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATERMASTER SERVICE AREAS IN NORTHERN CALIFORNIA

TABLE 1

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources: MAJOR STREAM and Tributaries*	Principal Water Sources: Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK	
Big Valley	Lassen, Modoc	PIT RIVER	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	W. Branch Feather River
Cow Creek	Shasta	COW CREEK** N. Cow, Clover, Oak Run Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
French Creek	Siskiyou	FRENCH CREEK Miners Creek	Duck Lake, Paynes Lake
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	M. FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels, Westside Canal	Little Truckee River
N. Fork Cottonwood Creek	Shasta	N. FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	N. FORK PIT RIVER Parker Creek	Pine, Cottonwood, Davis Creeks
Pine Creek	Butte, Tehama	PINE CREEK	
Seiad Creek	Siskiyou	Inactive	
Shackleford Creek	Siskiyou	SHACKLEFORD CREEK Mill Creek	Campbell and Cliff Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River	Dwinnell Reservoir (Lake Shastina)
South Fork Pit River	Modoc	S. FORK PIT RIVER Pine and Fitzhugh Creeks	West Valley Reservoir
Surprise Valley	Modoc	NONE (All creeks listed at right, are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, Eagle and Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks
Willow Creek	Siskiyou	WILLOW CREEK	

* Only principal tributaries are included. A complete listing is given in "Index to Water Sources," page vii.

** Cow Creek proper not in service area.

United States Geological Survey as part of a federal-state program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 4 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 2

SNOWPACK AS OF APRIL 1 AND MAY 1, 1972 AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas (Grouped Geographically)*	Snow Courses* Relating to Each Group	Elevation (in feet)	WATER CONTENT OF SNOW				
			April 1 Average (in inches)	April 1, 1972		May 1, 1972**	
				In Inches	In Percent of April 1 Average	In Inches	In Percent of April 1 Average
French Creek	Parks Creek	6,700	35.1	34.3	98		
Shackleford Creek	Middle Boulder No. 1	6,800	30.7	24.5	80	21.8	71
Shasta River	Little Shasta	6,200	20.0	27.1	136		
Ash Creek	Blue Lake Ranch	7,300	10.3	8.7	84		
Big Valley	Eagle Peak	7,200	15.5	21.1	136		
North Fork Pit River	Cedar Pass	7,100	16.6	21.6	130	17.6	106
South Fork Pit River	Adin Mountain	6,350	13.6	11.4	84	1.7	12
Surprise Valley							
Burney Creek	Thousand Lakes	6,500	36.4	27.6	76	26.4	73
Cow Creek	New Manzanita Lake	5,900	7.4	0.0	0	0.0	0
Digger Creek	Burney Springs	4,700	2.6	0.0	0	0.0	0
Hat Creek							
Butte Creek	Humbug Summit	4,850	11.6	0.0	0	0.0	0
Susan River	Silver Lake Meadows	6,450	28.4	19.5	69	15.6	55
	Fredonyer Pass No. 1	5,750	8.7	0.0	0	0.0	0
Indian Creek	Independence Lake	6,450	41.3	35.2	85	43.0	97
Middle Fork Feather River	Mount Deyer No. 1	7,100	24.9	16.7	67	18.1	73
	Rowland Creek	6,700	17.9	10.9	61	7.0	39
	Yuba Pass	6,700	30.0	18.5	62	15.1	50

* Snow courses are listed in order of elevation within each geographical group of watermaster service areas.

** Data collected only at stations listed.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1971-72 SEASON

Station Name	County	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Percent Of Mean
Fort Jones Ranger Station	Siskiyou	0.66	3.97	2.77	7.30	3.12	2.64	1.20	0.98	1.43	0.00	0.38	2.47	26.91	124
		1.58	2.77	4.02	4.06	3.14	2.21	0.98	1.11	0.81	0.35	0.34	0.40	21.78	
Happy Camp Ranger Station	Siskiyou	1.35	10.71	8.64	10.71	9.78	8.99	4.78	1.08	0.30	0.04	0.79	1.02	58.37	106
		4.07	7.25	10.41	11.31	8.24	6.45	2.72	2.16	1.06	0.38	0.17	0.74	54.96	
Yreka	Siskiyou	0.79	2.77	2.29	4.23	1.85	3.21	1.35	0.68	1.21	0.01	0.34	1.19	19.92	112
		1.45	2.00	3.30	3.19	2.29	1.61	0.92	1.03	0.86	0.27	0.39	0.45	17.76	
Chico Experimental Station	Butte	0.21	1.73	2.89	1.73	1.64	0.60	1.39	0.55	0.50	0.00	0.01	0.41	11.66	45
		1.46	2.41	5.12	5.03	4.43	3.29	2.31	1.18	0.44	0.01	0.07	0.33	26.06	
Redding Fire Station No. 2	Shasta	0.47	5.27	4.43	4.49	2.98	3.32	1.63	1.41	1.51	0.00	0.00	1.36	26.87	69
		2.27	3.76	7.26	7.69	6.19	4.90	2.95	1.74	1.31	0.11	0.13	0.61	38.92	
Hat Creek Power House No. 1	Shasta	0.49	1.92	2.01	1.87	3.43	0.56	1.23	1.15	0.02	0.00	0.00	2.25	14.93	83
		1.30	1.83	2.93	2.85	2.84	2.02	1.35	1.26	0.77	0.28	0.16	0.47	18.06	
Lookout 3WSW	Lassen	0.65	1.88	2.60	2.48	4.04	1.05	1.56	1.04	0.10	0.00	0.00	1.21	16.59	64
		1.97	3.54	5.31	8.25	1.21	1.90	1.73	1.19	1.95	0.11	0.46	0.47	26.09	
Lakeview, Oregon	Lake	1.07	1.61	1.52	2.98	2.60	1.70	1.20	0.59	0.16	0.22	0.05	1.27	14.97	104
		1.21	1.37	1.88	1.84	1.71	1.52	1.15	1.51	1.28	0.22	0.17	0.58	14.44	
Alturas Ranger Station	Modoc	0.73	1.38	0.80	1.53	2.48	0.91	0.88	0.64	0.24	0.04	0.19	1.42	11.43	89
		1.07	1.35	1.63	1.62	1.45	1.37	1.03	1.31	1.03	0.31	0.22	0.43	12.82	
Jess Valley	Modoc	1.12	2.18	1.88	2.35	1.58	1.83	1.79	0.79	1.03	0.48	0.37	1.47	16.88	98
		1.31	1.66	1.92	1.89	1.95	1.88	1.64	2.02	1.62	0.41	0.26	0.66	17.22	
Cedarville	Modoc	0.36	1.95	1.75	2.41	2.55	2.10	1.16	0.74	0.30	0.00	0.11	0.91	14.34	111
		1.17	1.41	1.69	1.84	1.50	1.45	0.99	1.04	0.94	0.33	0.15	0.37	12.88	
Susanville Airport	Lassen	0.12	0.61	5.46	1.34	1.17	0.55	0.74	0.68	0.24	0.40	0.00	0.64	11.95	83
		0.92	1.51	2.56	2.53	2.51	1.51	0.82	0.83	0.67	0.18	0.09	0.35	14.48	
Greenville Ranger Station	Plumas	0.33	3.39	9.45	2.41	5.82	1.74	4.43	1.40	0.28	0.00	0.00	0.85	30.20	70
		2.61	4.81	5.93	8.89	7.44	6.47	2.84	1.71	0.75	0.35	0.21	0.95	42.96	
Sierraville Ranger Station	Sierra	0.38	2.80	5.54	1.80	1.84	1.02	2.17	1.44	0.31	0.00	0.19	1.74	19.23	76
		1.83	2.76	4.49	4.94	4.23	2.84	1.83	1.25	0.54	0.29	0.15	0.44	25.39	
Vinton	Plumas	0.07	1.19	2.68	0.67	0.80	0.28	0.87	1.70	0.13	0.00	0.51	1.24	10.14	79
		0.89	1.44	2.12	1.94	1.87	1.43	0.84	1.01	0.50	0.36	0.18	0.25	12.83	

Note: Figures above line are for current season; below the line are long-term averages.

TABLE 4

RUNOFF AT SELECTED STATIONS - 1971-72 SEASON (IN ACRE-FEET)

Station	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Average*	Percent Average
Shasta River near Yreka	11,680	12,770	14,970	24,230	18,950	37,910	13,830	8,390	4,700	1,680	2,000	4,820	155,900	133,300	117
Hat Creek near Hat Creek	10,180	10,100	9,840	9,880	9,200	10,890	10,280	12,200	11,430	9,510	9,200	8,960	121,700	99,260	123
Pit River near Canby	9,640	8,470	8,780	27,150	36,310	107,800	31,470	24,230	14,360	3,350	5,780	5,170	282,300	181,800	155
South Fork Pit River near Likely	3,530	3,240	2,460	3,820	2,350	13,460	12,620	19,290	11,300	5,930	11,120	3,890	92,820	55,490	167
Susan River at Susanville	946	1,250	1,240	2,630	5,200	14,740	8,640	7,010	4,370	6,490	2,000	584	55,080	72,300	76
Indian Creek near Crescent Mills	7,870	7,690	11,350	15,900	28,590	80,430	44,610	31,720	8,730	1,550	899	1,616	241,000	400,600	60
Middle Fork Feather River near Clio	4,590	6,560	7,420	14,150	28,790	34,490	20,060	12,120	6,560	2,150	1,820	2,520	141,200	211,500	67
Butte Creek near Chico	7,660	8,690	14,120	16,830	24,300	33,870	32,090	20,340	12,310	8,580	7,510	7,090	193,400	291,200	66

* Long-term average.

SERVICE AREA DESCRIPTIONS AND 1972 NARRATIVES

This portion of the report consists of 19 sections, one for each service area active in 1972, presented in alphabetical order.

Each of these sections begins with a description of the particular service area, including location, geography, and general characteristics. Following this is a new section entitled "Basis of Service". Under this heading are presented such data as the case number, date, and type of decrees; a brief summary of the decree or agreement which defines the water rights; dates the service areas were created; and other related information.

As in earlier issues, these sections of the bulletin also present data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. In this bulletin, maps of the stream systems, including diversion locations, roads, etc., shown in their true relationship, are being introduced instead of the schematic figures.

A noticeable trend in recent years is the increasing number of water right owners in many areas, due to subdividing or "splitting" of property. For example, in the Ash Creek service area the number has increased from 32 in 1967 to 59 in 1972, almost doubling in 5 years. This trend not only causes more work for the individual watermasters, but makes it difficult to maintain up-to-date records of all ownerships and their respective water rights. As a result, the individual rights shown in connection with the maps may not be completely up-to-date.

As in previous years, watermaster service was begun on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decree. Service was continued in all areas through the growing season and concluded on September 30, 1972.

The date service was started in each service area and the name of the watermaster in charge are listed below:

Service Area	Date Service Began	Watermaster
Ash Creek	May 1, 1972	John A. Nolan
Big Valley	May 1, 1972	Virgil D. Buechler
Burney Creek	June 1, 1972	John M. Miller
Butte Creek	April 26, 1972	Kenneth E. Morgan
Cow Creek	June 1, 1972	John M. Miller
Digger Creek	June 1, 1972	John M. Miller
French Creek	July 1, 1972	George E. Pape
Hat Creek	May 1, 1972	Virgil D. Buechler
Indian Creek*	April 15, 1972	Harvey M. Jorgenson
M.F. Feather River*	April 1, 1972	Conrad Lahr, H. Joe Nessler
N.F. Cottonwood Creek	June 1, 1972	John M. Miller
N.F. Pit River	April 29, 1972	Charles H. Holmes
Pine Creek	July 1, 1972	Kenneth E. Morgan
Shackleford Creek	June 1, 1972	George E. Pape
Shasta River	April 2, 1972	George E. Pape
S.F. Pit River	April 10, 1972	John A. Nolan
Surprise Valley	March 19, 1972	William E. Gill, Jr.
Susan River	April 1, 1972	Lester L. Lighthall
Willow Creek	July 1, 1972	George E. Pape

* Within Central District; all others in Northern District

Ash Creek Watermaster Service Area

The Ash Creek service area is situated in Modoc and Lassen Counties near the town of Adin, about 100 miles northeast of Redding on State Highway 299. Figure 2, page 13, shows the Ash Creek stream system and diversions plus the principal roads in the area.

The major regulated streams in the service area are Ash Creek and three tributaries, Willow, Rush, and Butte Creeks. Ash Creek rises in the eastern part of the service area and flows westerly through the town of Adin into Ash Creek swamp and there to the Pit River. The valley floor in this vicinity is at an elevation of approximately 4,200 feet. Rush Creek heads in the northeastern part of the service area and joins Ash Creek above the town of Adin. Willow Creek and Butte Creek originate in the southeastern part of the service area and join Ash Creek near the head of Ash Creek swamp.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. The Ash Creek watermaster service area was created April 3, 1958. From 1949 through 1957 Ash Creek was included as a part of the Big Valley watermaster service area.

There are 59 water users in the service area with water rights totaling 123.65 cubic feet per second. Approximately 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The remaining water rights are along the upstream tributaries and in Ash Valley. The portion of Big Valley served is approximately 10 miles long by 6 miles wide, extending from the town of Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek decree establishes the number of priority classes on various stream systems within the Ash Creek service area as follows: Ash Creek - five; Willow Creek - four; Rush Creek - one, and Butte Creek - two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush Creeks is derived primarily from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow and Butte Creeks receive a substantial portion of their water from springs. These creeks normally have sufficient water to satisfy demands until about June 1, after which the supply decreases rapidly. By the latter part of June, Ash Creek normally has receded to about 20 cubic feet per second, Rush Creek to about 2 cubic feet per second, Willow Creek to about 5 cubic feet per second, and Butte Creek to less than 1 cubic foot per second. The flow of these creeks then remains nearly constant for the remainder of the season.

The daily mean discharge of Ash Creek at Adin is presented in Table 5, page 12. This stream gaging station is downstream from a substantial number of the points of diversion; consequently, the table does not include all of the available supply of this creek.

No stream gaging stations were operated on Butte, Rush, or Willow Creeks during the 1972 season.

Method of Distribution

Irrigation diversions from Ash Creek and its tributaries are accomplished by small dams placed in the stream channels. Most of the users have several diversion ditches at these dams. These ditches convey the water to the fields where it is spread by means of small laterals. Some of the users

employ a system of checks and borders, but most of the land is irrigated by wild flooding. Return flow is captured by downstream ranches for reuse. In one case a rancher may recirculate his drain water before returning it to the creek for further use. In a few areas, pumps are used to divert the water into ditches or through sprinkler systems.

1972 Distribution

Watermaster service began May 1 in the Ash Creek service area and continued until September 30. John A. Nolan, Water Resources Technician II, was watermaster during this period.

Willow Creek. The available water supply in Willow Creek was sufficient to satisfy all allotments (four priorities) until the first of June. The flow then dropped rapidly, causing regulation of second priority allotments to begin during the first week of June. Throughout the remainder of June and continuing until late August, the flow receded gradually. At this time, and for the remainder of the season, about 50 percent of the second priority allotments were served.

Butte Creek. The available water supply in Butte Creek was sufficient to satisfy all allotments (two priorities) until late spring. During the remainder of the season the flow gradually decreased. However, no distribution problems were encountered.

Ash Creek. The available water supply in Ash Creek was sufficient to meet all demands (five priorities) until the latter part of June. For most of the remainder of the irrigation season, water was available for first priority allotments only.

Rush Creek. The available water supply in Rush Creek was sufficient to satisfy all allotments (one priority) until the end of July. By late September the flow had gradually decreased to about 80 percent of all allotments.

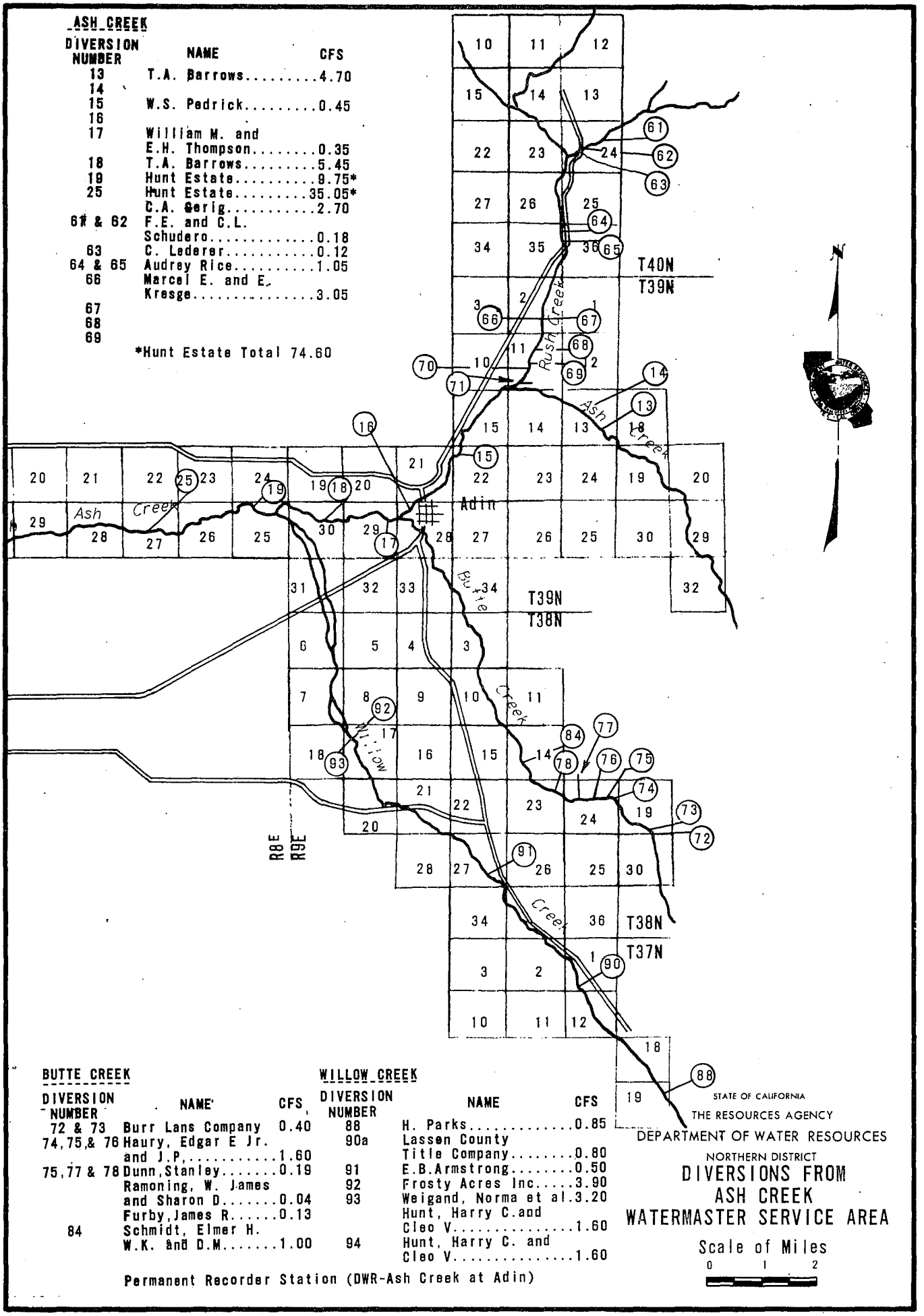
ASH CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 5

ASH CREEK AT ADIN

Day	March	April	May	June	July	August	September	Day
1	738	116	68	30	19	28	9.5	1
2	733	132	66	28	20	30	14	2
3	1460	126	66	30	21	29	15	3
4	1070	121	65	30	20	29	20	4
5	832	129	65	29	20	30	23	5
6	631	123	66	38	17	30	27	6
7	520	114	64	40	16	30	20	7
8	441	108	70	40	15	31	17	8
9	414	104	70	33	16	32	16	9
10	433	100	58	25	16	35	17	10
11	410	99	55	25	16	30	19	11
12	391	107	50	26	16	29	24	12
13	407	108	48	25	15	29	21	13
14	372	128	41	23	17	29	20	14
15	313	132	40	22	18	28	20	15
16	281	113	42	22	16	28	20	16
17	265	98	46	22	16	26	20	17
18	257	91	48	22	15	26	20	18
19	231	87	48	22	16	24	20	19
20	211	85	75	22	16	23	21	20
21	199	83	70	21	16	23	22	21
22	198	81	62	20	25	24	23	22
23	199	80	54	21	31	24	23	23
24	183	82	48	22	25	19	24	24
25	189	81	43	21	33	14	26	25
26	166	78	39	21	26	16	37	26
27	157	74	36	21	24	20	51	27
28	145	74	34	20	25	18	33	28
29	134	71	32	19	26	18	26	29
30	124	71	31	19	28	15	27	30
31	117		31		28	9.6		31
Mean	394	99.9	52.6	25.3	20.3	25.1	22.5	Mean
Runoff In Acre-Feet	24240	5942	3235	1505	1246	1540	1340	Runoff In Acre-Feet


ASH CREEK
DIVERSION NUMBER | NAME | CFS
13 | T.A. Barrows | 4.70
14
15 | W.S. Pedrick | 0.45
16
17 | William M. and E.H. Thompson | 0.35
18 | T.A. Barrows | 5.45
19 | Hunt Estate | 9.75*
25 | Hunt Estate | 35.05*
C.A. Gerig | 2.70
61 & 62 | F.E. and C.L. Schudero | 0.18
63 | C. Lederer | 0.12
64 & 65 | Audrey Rice | 1.05
66 | Marcel E. and E. Kresge | 3.05
67
68
69
*Hunt Estate Total 74.60
T40N
T39N
T38N
T37N
R8E
R9E
Rush Creek
Ash Creek
Butte Creek
Willow Creek
Adin
BUTTE CREEK
DIVERSION NUMBER | NAME | CFS
72 & 73 | Burr Lans Company | 0.40
74,75,& 76 | Haury, Edgar E Jr. and J.P. | 1.60
75,77 & 78 | Dunn,Stanley | 0.19
Ramoning, W. James and Sharon D. | 0.04
Furby,James R. | 0.13
84 | Schmidt, Elmer H. W.K. and D.M. | 1.00
WILLOW CREEK
DIVERSION NUMBER | NAME | CFS
88 | H. Parks | 0.85
90a | Lassen County Title Company | 0.80
91 | E.B.Armstrong | 0.50
92 | Frosty Acres Inc. | 3.90
93 | Weigand, Norma et al. | 3.20
Hunt, Harry C.and Cleo V. | 1.60
94 | Hunt, Harry C. and Cleo V. | 1.60
Permanent Recorder Station (DWR-Ash Creek at Adin)
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM ASH CREEK WATERMASTER SERVICE AREA
Scale of Miles
0 1 2

Big Valley Watermaster Service Area

The Big Valley service area is in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber, about 90 miles northeast of Redding via State Route 299.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out at the southern end. The major area of use is about 13 miles of valley floor, up to 6 miles wide, along the Pit River at an approximate elevation of 4,200 feet.

A map of the Big Valley stream system with towns, roads and diversions is presented as Figure 3, pages 18 and 19.

Basis of Service

The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959. The Big Valley watermaster service area was created on November 13, 1934, and service began with the 1935 season, operating under an agreement recorded in 1934.

Distributing the water on a continuous-flow basis, as provided by the decree, has proven impracticable because of the wide variation of flow which frequently occurs. By mutual agreement, an alternative procedure has been established allowing each user a definite amount of water in acre-feet (AF) for each cubic foot per second (cfs) of right allotted by the decree. The watermaster estimates the amount of water available for the next 15 to 30 days and then chooses the appropriate acre-foot/cfs ratio so that the rotation through the valley is completed in not more than 30 days.

There are 58 water users in the service area with total rights of 241.82 cfs, of which 154.23 cfs are second priority, 29.59 cfs third priority, and 43 cfs fourth priority; with 15 cfs set aside for first priority (stock water and channel storage). Under the decree, the water rights were determined on a basis of 1 cfs per 70 acres of irrigable land.

Water Supply

The flow in the Pit River at the head of Big Valley is derived principally from direct runoff, mainly snowmelt, and return flow from irrigation water released from West Valley and Big Sage Reservoirs above South Fork Pit River and Hot Springs Valleys, respectively.

The available water supply in the Pit River as it flows through Big Valley is ordinarily adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Valley, about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley throughout the remainder of the irrigation season. Water users in Hot Springs Valley divert most of the flow of the Pit River for 2- or 3-week periods. Natural flow available for use in Big Valley during these periods is often less than 20 cfs. Periodic releases from channel storage in the lower end of the valley sometimes increase the flow to as much as 200 to 300 cfs for relatively short periods. Consequently, equitable water distribution in Big Valley is very difficult to attain.

Roberts Reservoir, which stores runoff of a minor tributary of the Pit River at the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

Records of two stream gaging stations in the Big Valley service area are presented in Tables 6 and 7, page 17.

Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule either by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Much of the runoff is recaptured for use by downstream lands, resulting in a relatively high irrigation efficiency for the valley.

1972 Distribution

Watermaster service began in the Big Valley service area on May 1 and continued through September 30, with Virgil D. Buechler, Water Resources Technician II, as watermaster.

The season began with Big Sage and West Valley Reservoirs at full capacity. West Valley Reservoir spilled water until July 1. The snowpack in the Warner Mountains was below normal, so a dry irrigation season was expected. The spring months were abnormally cold, windy, and dry.

The river dams were installed in May and early summer irrigations were started. On June 24, storage in the upper river dams was released and the meadows were dried up for haying. On July 24, haying operations were completed and the first irrigation after haying was started. A rotation using a 5 AF/cfs-ratio was completed by August 7 with the Roberts Reservoir shareholders using 872 AF and Iverson Reservoir shareholders to receive a 100 percent irrigation. A second rotation of 12.5 AF/cfs was completed August 18 with 160 AF of Roberts Reservoir water and 30 percent of Iverson Reservoir storage being added. A third irrigation of 17.5 AF/cfs was completed August 29, and two more irrigation rotations were completed in September.

Three irrigation rotations in August are very unusual, but as a result of this dry year, the West Valley and Big Sage users irrigated more often, allowing more irrigation runoff water to reach Big Valley.

From July 24 to August 12, 1972, Roberts Reservoir water was released for use by the shareholders as follows:

Name	Acre-Feet
Cyril Mamath	86
Hunt Estate	116
Sam Gerig	161
Norris Gerig	150
Ward Kramer	144
D. Babcock and C. Hawkins	230
Eicholtz Ranch	100
Merlin Kennedy	50
Total	1,037

L. Woods, J. McArthur, and J. Britten used 75 percent of the storage of Iverson Reservoir in two irrigations.

BIG VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 6

PIT RIVER NEAR CANBY

Day	March	April	May	June	July	August	September	Day
1	4220	534	354	288	233	73	107	1
2	3530	573	340	258	148	73	107	2
3	3630	703	289	193	92	62	70	3
4	4020	726	351	279	48	134	76	4
5	3810	679	367	386	20	109	86	5
6	3360	687	343	453	58	79	85	6
7	2780	680	330	347	60	65	65	7
8	2320	632	389	343	51	61	57	8
9	1990	575	489	449	34	60	144	9
10	1800	543	493	502	49	73	99	10
11	1640	525	420	473	41	104	75	11
12	1530	530	378	473	42	63	107	12
13	1490	553	341	425	45	100	87	13
14	1450	579	248	330	46	110	81	14
15	1390	618	205	242	38	87	84	15
16	1320	655	200	242	24	80	104	16
17	1250	694	354	234	20	101	80	17
18	1230	639	537	188	21	106	67	18
19	1240	535	508	161	39	97	60	19
20	1190	472	552	120	38	95	57	20
21	1100	412	531	87	34	111	57	21
22	1010	402	617	55	34	127	57	22
23	963	368	633	60	33	121	59	23
24	916	366	531	69	32	109	66	24
25	873	386	435	69	29	107	78	25
26	830	391	346	67	29	95	88	26
27	778	359	314	82	43	100	117	27
28	712	341	307	96	64	101	126	28
29	667	348	369	110	71	90	144	29
30	618	363	348	160	105	111	119	30
31	567		297		68	112		31
Mean	1749	529	394	241	54.5	94.1	87	Mean
Runoff In Acre-Feet	107600	31470	24230	14360	3350	5780	5170	Runoff In Acre-Feet

TABLE 7

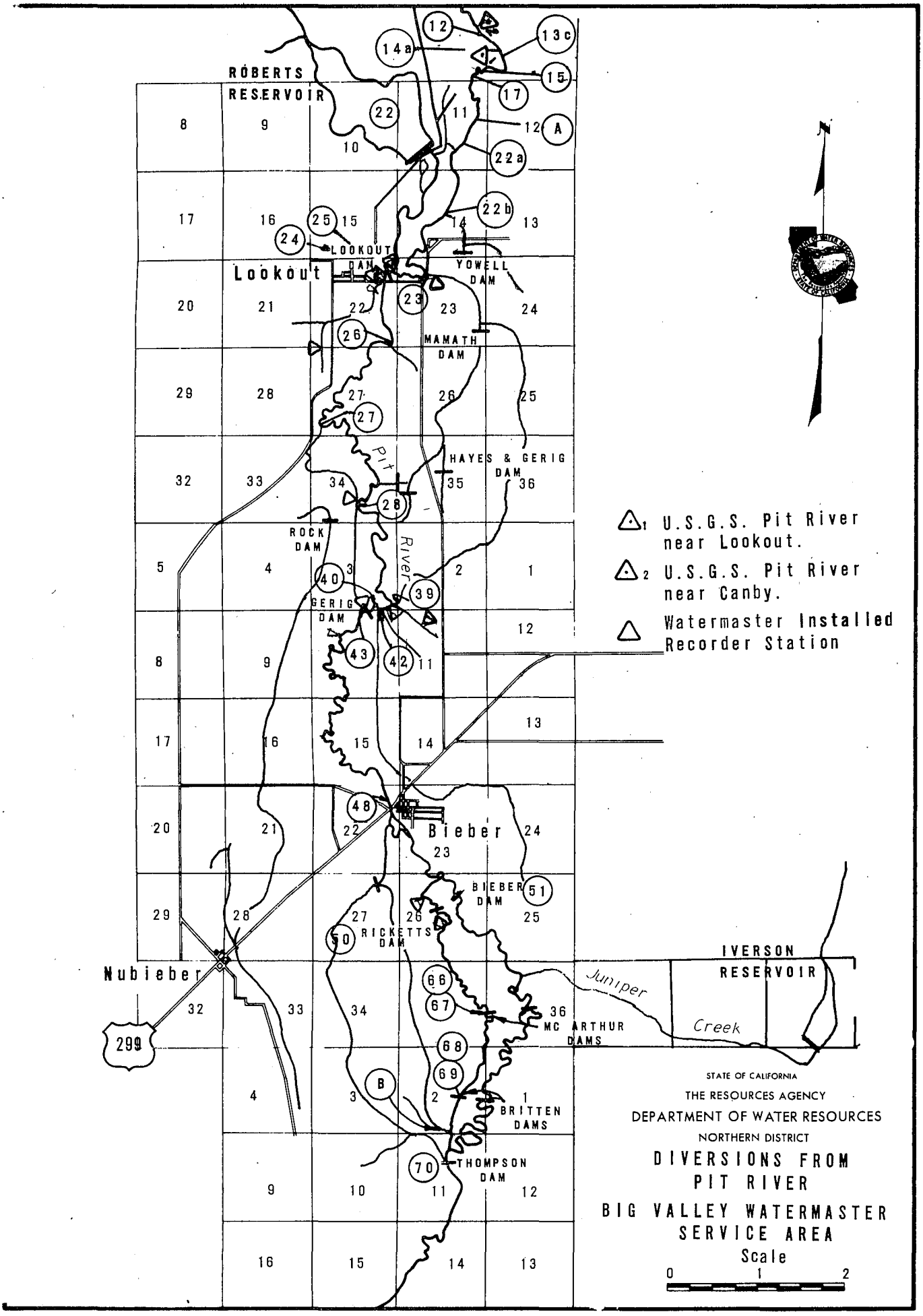
PIT RIVER NEAR BIEBER

Day	March	April	May	June	July	August	September	Day
1	8480	795	446	320	33	1.3	20	1
2	7100	748	450	231	38	1.2	53	2
3	6170	754	410	119	74	1.2	24	3
4	5970	837	254	35	88	1.1	11	4
5	5950	900	284	90	61	1.1	12	5
6	5660	886	302	295	43	1.1	15	6
7	5040	886	284	362	59	1.2	31	7
8	4300	886	316	334	59	1.5	38	8
9	3550	837	320	320	72	18	16	9
10	3080	760	354	326	45	11	24	10
11	2790	724	520	402	30	3.0	17	11
12	2560	742	434	442	22	1.1	17	12
13	2400	837	128	362	19	1.1	25	13
14	2270	872	59	390	21	1.5	30	14
15	2180	886	194	346	18	1.6	115	15
16	2050	893	346	323	9.8	1.8	79	16
17	1910	893	190	323	6.0	2.3	44	17
18	1790	886	282	237	5.2	2.1	24	18
19	1690	858	478	194	5.6	2.3	31	19
20	1630	754	500	163	4.4	2.8	135	20
21	1570	670	555	122	4.0	2.3	73	21
22	1500	590	560	74	3.0	2.5	29	22
23	1440	555	585	74	2.3	2.5	17	23
24	1360	520	610	61	1.9	3.6	18	24
25	1320	486	605	61	1.8	4.8	24	25
26	1260	482	555	51	1.6	5.2	33	26
27	1190	495	462	35	1.5	38	147	27
28	1110	482	390	36	1.5	16	147	28
29	1020	450	131	35	1.3	12	134	29
30	935	442	146	35	1.5	9.4	191	30
31	865		328		1.5	6.4		31
Mean	2908	727	370	207	23.7	5.2	52.5	Mean
Runoff In Acre-Feet	178800	43250	22770	12290	1460	319	3120	Runoff In Acre-Feet

DIVERSIONS FROM
PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA

DIVERSION NUMBER	NAME	CFS	ACRE FEET
	First priority for the entire river is to maintain channel storage and stock water.	15.00	
12	Ebersale (pump)	3.02	
13c	Duncan	2.86	
14a	Gould	1.20	
15	Hines Brothers	7.26	
17	Barnett	6.98	
22	Roberts Reservoir Water Rights ----------Total		5500
	N. Gerig 5 shares		
	O. Gerig 3 shares		
	D. Babcock 3 shares		
	L.W.Kramer 2 shares		
	Hunt Estate 2 shares		
	M.Kennedy 1 share		
	C.Mammoth 1 share		
	C.Hawkins 1 share		
	L.Manchamp 1 share		
	Eicholz 1 share		
22a	Manchamp	1.73	
22b	Biddins	4.10	
23	Three Corners Diversion ----------Total	18.47	
	Mammoth	3.83	
	Hunt Estate	6.30	
	Hayes	3.37	
	S.Gerig	4.97	
24	Lookout Dam		
25	Ollar Ditch ----------Total	15.69	
	Eicholz	11.35	
	Leventon	4.34	
26	Brown (pump)	3.48	
27	Potter(pump)	5.36	
28	Fulcher Ditch ----------Total	15.28	
	Kramer	5.24	
	Hall	4.22	
	Knox Ranch (N.Gerig)	4.22	
39	Ash Creek Pipe		
40	N.Gerig	8.17	
42	Watson Ditch ----------Total	3.04	
	D.Babcock	2.23	
	C.Hawkins	0.81	
43	Gerig Dam		
48	Babcock Pipes ----------Total	31.67	
	Snipes	1.61	
	Kennedy	2.51	
	J.McArthur	7.28	
	Babcock Brothers	14.34	
	S.J.&W.H.Thompson	3.21	
	W.Druwry	2.72	
50	Ricketts Dam		
51	Bieber Dam		
66 & 67	McArthur Dam	12.14	
68 & 69	Britten Dam	11.23	
70	Thompson Dam	11.50	
A	Hallmark Pump	1.77	
B	Campbell Dam	1.28	

Figure 3


ROBERTS RESERVOIR
Lookout
LOOKOUT DAM
YOWELL DAM
MAMATH DAM
HAYES & GERIG DAM
ROCK DAM
GERIG DAM
Pit River
Bieber
BIEBER DAM
RICKETTS DAM
Nubieber
299
IVERSON RESERVOIR
Juniper Creek
MC ARTHUR DAMS
BRITTEN DAMS
THOMPSON DAM
U.S.G.S. Pit River near Lookout.
U.S.G.S. Pit River near Canby.
Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA
Scale
0 1 2

Burney Creek Watermaster Service Area

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. Figure 4, page 23, shows the Burney Creek stream system including the diversions and roads.

The source of water supply for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The portion of the valley served by this stream is approximately 11 miles long and 2 miles wide, and extends both north and south of Burney. The service area is approximately 3,200 feet in elevation.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. The Burney Creek watermaster service area was created September 11, 1929; however, service had been provided in accordance with the decree since 1926.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz ditch is distributed in accordance with supplemental court decrees.

The Burney Creek service area was created on September 11, 1929. There are 10 water right owners in the area with total allotments of 33.09 cubic feet per second.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 feet on the northeast slopes of Burney Mountain. The creek normally has sufficient water to supply all demands until about the middle of June. The supply then gradually decreases until the end of July. For the remainder of the irrigation season, runoff from perennial springs keeps the flow nearly constant at approximately 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 8, page 22. The stream gaging station on Burney Creek is downstream from four points of diversion; consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to irrigate the land.

1972 Distribution

The watermaster in the Burney Creek service area was John M. Miller, Water Resources Technician II, beginning on June 1 and continuing until September 30.

By agreement, as stated above, all allotments were distributed on a continuous-flow basis.

The Pierpont Ranch, farthest downstream decreed user on Burney Creek, chose not to irrigate during the 1972 season. Therefore, except for stockwater allotments delivered to the ranch, its water rights were apportioned among the other users on the creek.

The available water supply for the 1972 irrigation season, despite a dry spring season, was relatively normal. A small

surplus flow was available to all users until early July, at which time all diversions were regulated to 100 percent of first priority allotments. The supply gradually decreased to about 80 percent of first priority allotments during the latter part of August and held there for the rest of the irrigation season. Because of showers and cooler temperatures during the early part of September, further decreases in the amount of water supply available during the last weeks of the irrigation season were unnecessary.

Special Occurrences

A corrective adjustment in elevation of the headgates of the Greer-Cornaz ditch was made in June.

BURNEY CREEK WATERMASTER SERVICE AREA

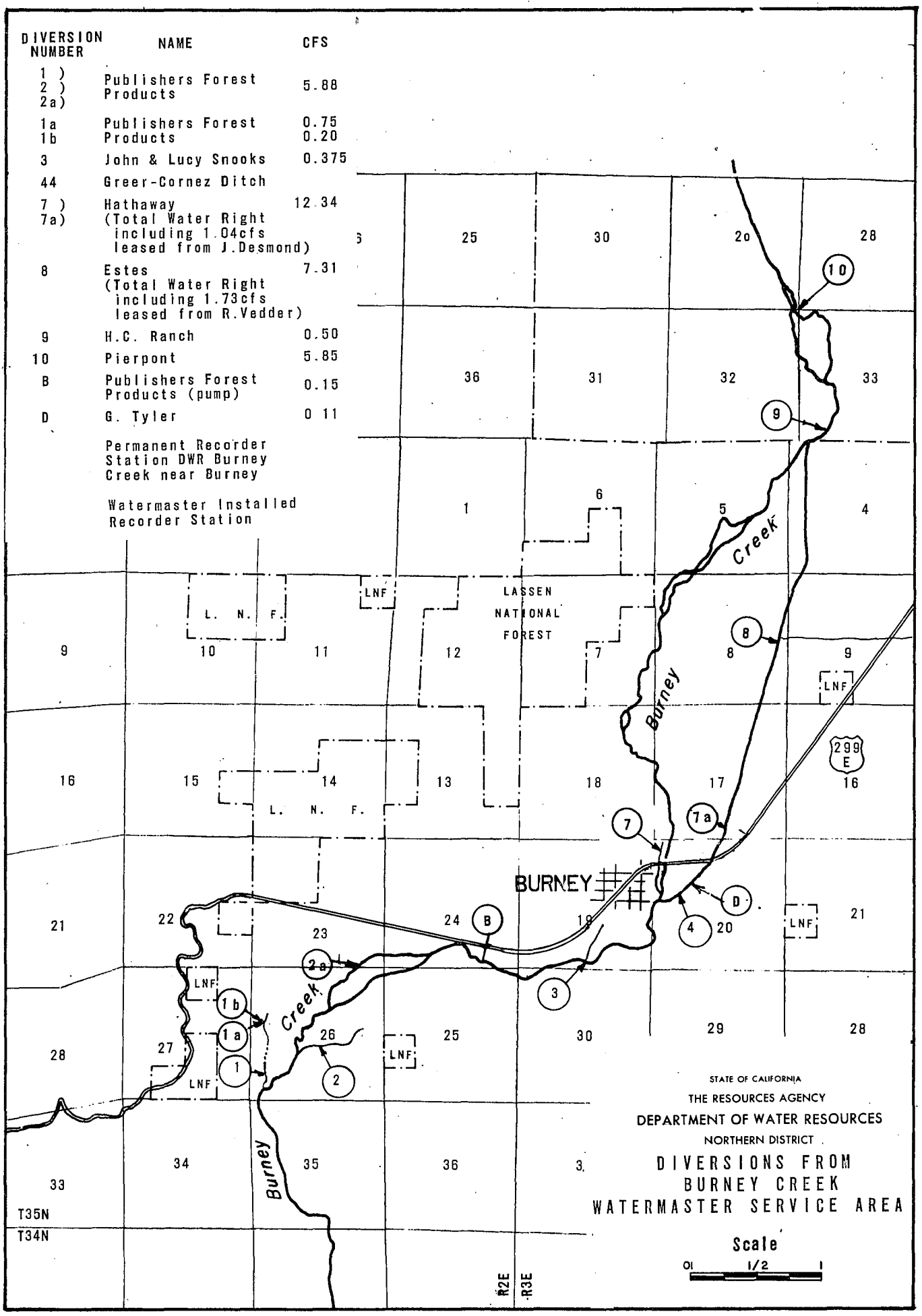
1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 8

BURNEY CREEK NEAR BURNEY

Day	March	April	May	June	July	August	September	Day
1	300	117	84	45	18	12	8.8	1
2	293	129	80	41	18	13	8.8	2
3	491	125	73	36	17	12	9.3	3
4	424	119	73	34	16	11	11	4
5	329	239	76	34	16	12	16	5
6	265	252	77	33	16	12	11	6
7	242	175	81	33	17	11	11	7
8	221	151	90	31	17	11	11	8
9	222	138	86	32	16	12	10	9
10	270	129	78	44	16	12	9.9	10
11	285	150	75	41	16	12	12	11
12	259	162	73	36	17	12	13	12
13	269	143	74	34	17	12	12	13
14	247	142	76	30	17	12	13	14
15	223	140	75	30	18	12	11	15
16	216	143	72	25	17	12	11	16
17	211	135	70	27	16	12	13	17
18	198	121	68	25	16	12	14	18
19	182	111	67	24	16	11	13	19
20	166	105	78	24	16	11	14	20
21	158	101	87	20	16	12	14	21
22	240	98	80	19	16	12	13	22
23	225	95	74	20	16	11	14	23
24	197	121	68	21	15	11	14	24
25	235	113	63	21	15	10	14	25
26	179	100	60	21	14	11	30	26
27	157	94	58	21	13	11	73	27
28	142	94	57	19	13	9.3	39	28
29	133	89	54	18	13	7.4	27	29
30	125	85	50	17	13	7.6	22	30
31	120		47		13	8.5		31
Mean	233	131	71.7	28.5	15.8	11.2	16.4	Mean
Runoff In Acre-Feet	14330	7767	4411	1698	972	688	977	Runoff In Acre-Feet

Figure 4


DIVERSION NUMBER
NAME
CFS
1) 2) 2a) Publishers Forest Products 5.88
1a Publishers Forest 0.75
1b Products 0.20
3 John & Lucy Snooks 0.375
44 Greer-Cornez Ditch
7) 7a) Hathaway (Total Water Right including 1.04cfs leased from J.Desmond) 12.34
8 Estes (Total Water Right including 1.73cfs leased from R.Vedder) 7.31
9 H.C. Ranch 0.50
10 Pierpont 5.85
B Publishers Forest Products (pump) 0.15
D G. Tyler 0.11
Permanent Recorder Station DWR Burney Creek near Burney
Watermaster Installed Recorder Station
LASSEN NATIONAL FOREST
L. N. F.
LNF
Burney Creek
BURNEY
299 E
T35N
T34N
R2E
R3E
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM BURNEY CREEK WATERMASTER SERVICE AREA
Scale
0 1/2 1

Butte Creek Watermaster Service Area

The Butte Creek service area is situated in Butte County a few miles southeast of the City of Chico. The watermaster service area extends for about 11 miles along Butte Creek, commencing approximately 4 miles east of Chico and extendint downstream to the crossing of Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

A map of the Butte Creek stream system is presented in Figure 5, page 29.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

There are presently 44 water rights owners in the service area (below Diversion 50) with allotments totaling 422.30 cubic feet per second.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of Feather River.

The Water Resources Control Board, on September 18, 1969, granted permits for the following applications to appropriate water from Butte Creek: applications 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains approximately 150 square miles of the western slope of the Sierra Nevada Mountains in the northeasterly portion of Butte County above the watermaster service area. The maximum elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perrenial springs continue to produce flows of more than 40 cubic feet per second. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 9, 10, and 11, pages 26 and 27.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1972 Distribution

Watermaster service began April 26, 1972, in the Butte Creek service area

and continued until September 30, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The available water supply for the 1972 irrigation season on Butte Creek was below normal. However, several first priority water right owners did not use water, so those who did divert did not have a severe shortage.

Flow to the surplus class diversions of Newhall Land and Farming Company and Gorrill Land Company continued until about July 12. From July 15 through September 23 the water supply was sufficient to supply a portion of second priority. Due to early fall rain and decreasing demands for water, there was sufficient water to meet all needs after that date.

BUTTE CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 9

BUTTE CREEK NEAR CHICO

Day	March	April	May	June	July	August	September	Day
1	688	380	391	256	153	125	115	1
2	619	383	389	251	152	124	115	2
3	879	385	383	248	148	123	115	3
4	815	387	384	239	141	123	115	4
5	723	689	384	231	140	125	119	5
6	642	1050	385	234	146	122	117	6
7	588	732	380	236	151	122	115	7
8	554	611	372	232	149	120	113	8
9	554	552	357	242	149	122	112	9
10	616	516	348	291	145	119	113	10
11	597	581	338	248	146	119	113	11
12	573	750	333	233	147	118	116	12
13	548	751	331	222	142	119	116	13
14	541	616	332	210	139	121	113	14
15	518	594	332	203	137	121	112	15
16	521	602	328	200	136	123	112	16
17	524	588	324	196	136	138	111	17
18	513	549	315	190	136	131	112	18
19	489	516	314	185	136	127	113	19
20	464	492	345	184	139	126	114	20
21	451	479	370	179	139	126	112	21
22	539	471	323	176	138	124	113	22
23	530	461	302	173	136	122	110	23
24	487	490	289	175	135	122	111	24
25	528	466	286	173	133	122	112	25
26	486	434	280	167	131	120	125	26
27	458	422	276	161	130	118	161	27
28	433	421	272	161	131	115	164	28
29	412	412	270	157	130	117	147	29
30	396	397	264	155	130	116	141	30
31	388		258		127	115		31
Mean	551	539	331	207	140	122	119	Mean
Runoff In Acre-Feet	33870	32090	20340	12310	8580	7510	7090	Runoff In Acre-Feet

BUTTE CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 10

BUTTE CREEK NEAR DURHAM

Day	March	April	May	June	July	August	September	Day
1	626	265	192	95	21	12	8.4	1
2	555	264	187	89	23	10	7.7	2
3	793	265	183	88	21	12	7.8	3
4	738	281	183	90	16	11	9.2	4
5	637	538	184	83	17	12	8.9	5
6	559	991	186	81	19	11	8.6	6
7	512	639	181	76	20	12	8.9	7
8	479	520	174	76	22	9.4	9.0	8
9	472	461	161	80	24	8.3	6.5	9
10	533	438	155	115	21	8.2	8.9	10
11	548	496	149	90	18	6.8	9.5	11
12	526	663	150	82	16	7.9	10	12
13	502	706	162	72	13	8.2	18	13
14	480	550	160	46	11	8.6	8.0	14
15	436	527	159	33	8.6	12	6.1	15
16	436	539	157	29	11	11	5.4	16
17	441	486	164	28	14	11	5.2	17
18	426	423	155	32	11	11	4.1	18
19	397	392	150	26	11	9.7	3.7	19
20	373	366	190	19	10	7.4	3.9	20
21	358	381	249	12	11	9.0	5.0	21
22	425	389	184	11	11	6.2	4.2	22
23	427	374	170	15	11	5.1	8.9	23
24	382	372	157	18	9.9	5.7	17	24
25	403	342	149	18	10	6.2	21	25
26	380	311	146	15	7.2	7.1	29	26
27	351	286	144	16	8.2	8.5	65	27
28	326	252	140	23	8.9	7.3	73	28
29	301	227	124	20	9.5	11	58	29
30	286	200	119	19	13	8.9	64	30
31	274		106		18	9.4		31
Mean	464	431	164	49.9	14.4	9.2	16.8	Mean
Runoff In Acre-Feet	28530	25670	10060	2969	883	563	997	Runoff In Acre-Feet

TABLE 11

TOADTOWN CANAL ABOVE BUTTE CANAL

Day	March	April	May	June	July	August	September	Day
1	111	110	110	109	60	53	43	1
2	111	110	110	109	63	53	44	2
3	115	110	109	108	56	52	44	3
4	111	110	109	103	51	51	44	4
5	113	115	109	105	48	51	45	5
6	112	114	108	110	57	50	44	6
7	111	113	110	110	62	50	44	7
8	110	113	110	110	64	48	43	8
9	110	116	110	111	58	52	43	9
10	110	114	110	110	55	48	43	10
11	110	115	110	110	60	50	43	11
12	111	117	110	106	61	50	44	12
13	114	115	110	102	58	50	43	13
14	113	115	110	88	59	51	43	14
15	111	109	109	91	58	50	42	15
16	111	111	109	88	58	53	42	16
17	111	112	108	86	57	56	42	17
18	111	110	107	83	56	53	42	18
19	111	110	110	80	58	51	42	19
20	111	110	111	77	58	51	42	20
21	110	109	110	74	57	50	42	21
22	114	109	109	72	56	50	43	22
23	111	110	110	69	53	50	43	23
24	110	111	110	69	53	50	43	24
25	110	110	109	67	55	50	43	25
26	111	110	108	65	55	50	53	26
27	110	110	110	63	56	47	75	27
28	110	110	110	61	51	45	70	28
29	110	110	110	62	55	45	68	29
30	112	110	110	64	45	44	67	30
31	110		110		49	40		31
Mean	111	112	110	86.7	56.2	49.8	47.0	Mean
Runoff In Acre-Feet	6840	6640	6730	5280	3460	3060	2790	Runoff In Acre-Feet

Diversion #	Water Right Owner	Priority 1st	Priority 2nd	Priority 3rd	Surplus	Import	Application Permit
Butte Creek							
50	M. & T. Incorporated	3.00			25.00	53.33*	
	Parrott Investment Company				25.00	53.33*	
	McClain, Benson, et al	3.00					
	Dayton Mutual Water Company	16.00				3.33*	
	*Water imported by PG&E from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses.						
53[2/]	U. S. Department of Agriculture	2.00					
54	Patrick	4.445					13.0[1/]
	Smith	0.555					
55	Camenzind Brothers	5.00					6.50[1/]
56	Durham Mutual Water Company	44.70					
	Parrott Investment Company	2.00					
	Carlson	0.48					
	Bell	0.39					
	Domom Brothers	0.67					
	Logan	0.01					
	Vernoga	1.447					
	Konyn - Amerio	0.40					
	Bebich	0.446					
	Jugum	0.447					
	Wheelock	0.26					
	Total	51.25					
57[2/]	Coats	2.00					
58[2/]	Wakefield	0.61					
	Hansen				2.50		
59B[2/]	Brandt	0.39					
60	Newhall Land & Farming Company		6.00	0.75	21.25		150.00[3/]
60A[2/]	Knowles	0.66					
	Phillips	0.66					
61	Gorrill Land Company[4/]			1.00[5/]	20.70[5/]		75.00[3/]
62[2/]	White, Mead, McAlister, & Ryon			1.00	9.50		
Hamlin Slough							
	Newhall Land & Farming Company	16.60					
	Gorrill Land Company	21.70[5/]					

1/ March 1 - June 30

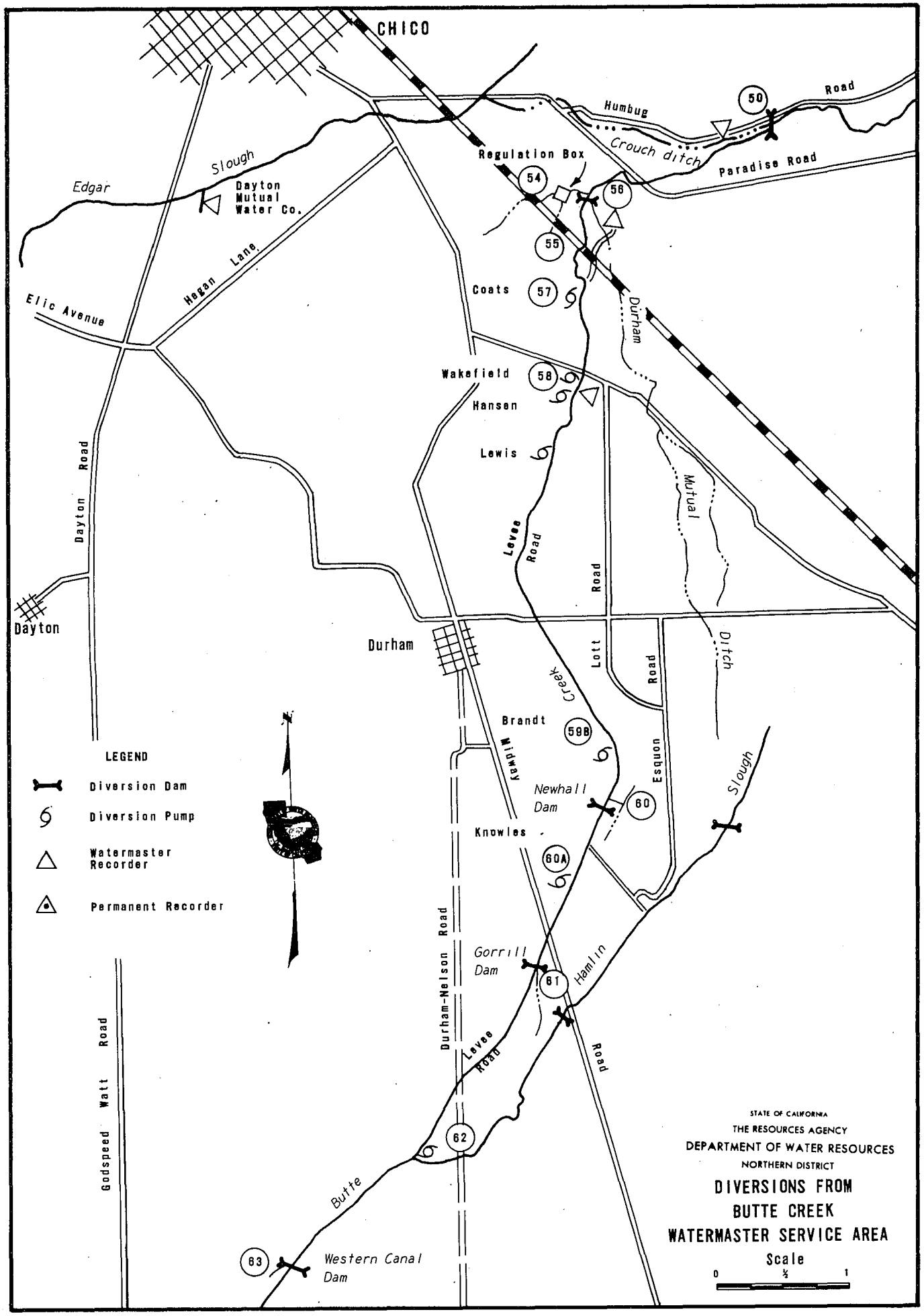
2/ Pumps

3/ March 15 - June 15

4/ See Hamlin Slough

5/ Total diversions from Butte Creek and Hamlin Slough not to exceed 21.70 cfs.

Figure 5


CHICO
Humbug
Road
50
Crouch ditch
Paradise Road
Regulation Box
54
56
55
Edgar
Slough
Dayton
Mutual
Water Co.
Hegan Lane
Elic Avenue
Coats
57
Durham
Wakefield
58
Hansen
Lewis
Dayton Road
Levee Road
Mutual
Road
Dayton
Durham
Lott
Road
Ditch
Brandt
59B
Creek
Midway
Esquon
Slough
Newhall
Dam
60
Knowles
60A
Durham-Nelson Road
Gorrill
Dam
61
Hamlin
Levee Road
Road
Godspeed Watt Road
62
Butte
63
Western Canal
Dam
LEGEND
Diversion Dam
Diversion Pump
Watermaster Recorder
Permanent Recorder
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
BUTTE CREEK
WATERMASTER SERVICE AREA
Scale
0
½
1

Cow Creek Watermaster Service Area

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Figures 6 through 6e, pages 34 through 39, show the Cow Creek stream system including the diversions and major access roads.

The source of water supply for this service area consists of three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow in a westerly direction to their confluence in the Millville-Palo Cedro area and thence south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

Creek	Decree No.	Date
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees (see Table 1) except for the Oak Run Creek decree which contains a surplus allotment.

The Cow Creek watermasters service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

There are 90 water right owners in the area with total allotments of 67.367 cubic feet per second.

Water Supply

The water supply for this service area is derived mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists primarily of low brushy hills which do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter months normally produce substantial springs and seepage that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 12, page 33. The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster primarily to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by roation since 1934.

1972 Distribution

John M. Miller, Water Resources Technician II, was watermaster in the Cow Creek service area from June 1 until September 30.

Cedar Creek. Cedar Creek consistently has the lowest ratio of water supply to water rights in the Cow Creek service area. However, during 1972 some water right owners chose not to use their allotments. Consequently, those using water received a reasonably good supply throughout the summer.

North Cow Creek. There was a surplus flow of water in North Cow Creek until mid-July. There was sufficient water available through mid-August to fill all allotments. During the latter part of August, extremely high temperatures caused a temporary drop in the lower reaches and the available supply dropped to 80 percent of allotments. During the first week in September, the temperature dropped and light-to-heavy showers increased the allotments to 90 percent, which continued through September.

Oak Run Creek. The available water supply in Oak Run Creek was sufficient to supply surplus flows until mid-July. Due to the dry spring and also the extreme temperatures during the latter part of July and most of August, the available supply decreased during this time to below 100 percent. Early rains in September, however, eased the situation and the water supply gradually increased to 100 percent toward the end of September.

Clover Creek. There was a surplus flow of water in Clover Creek until the first week in July. The flow gradually decreased to 80 percent the first of August and continued at 80 percent through September.

COW CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

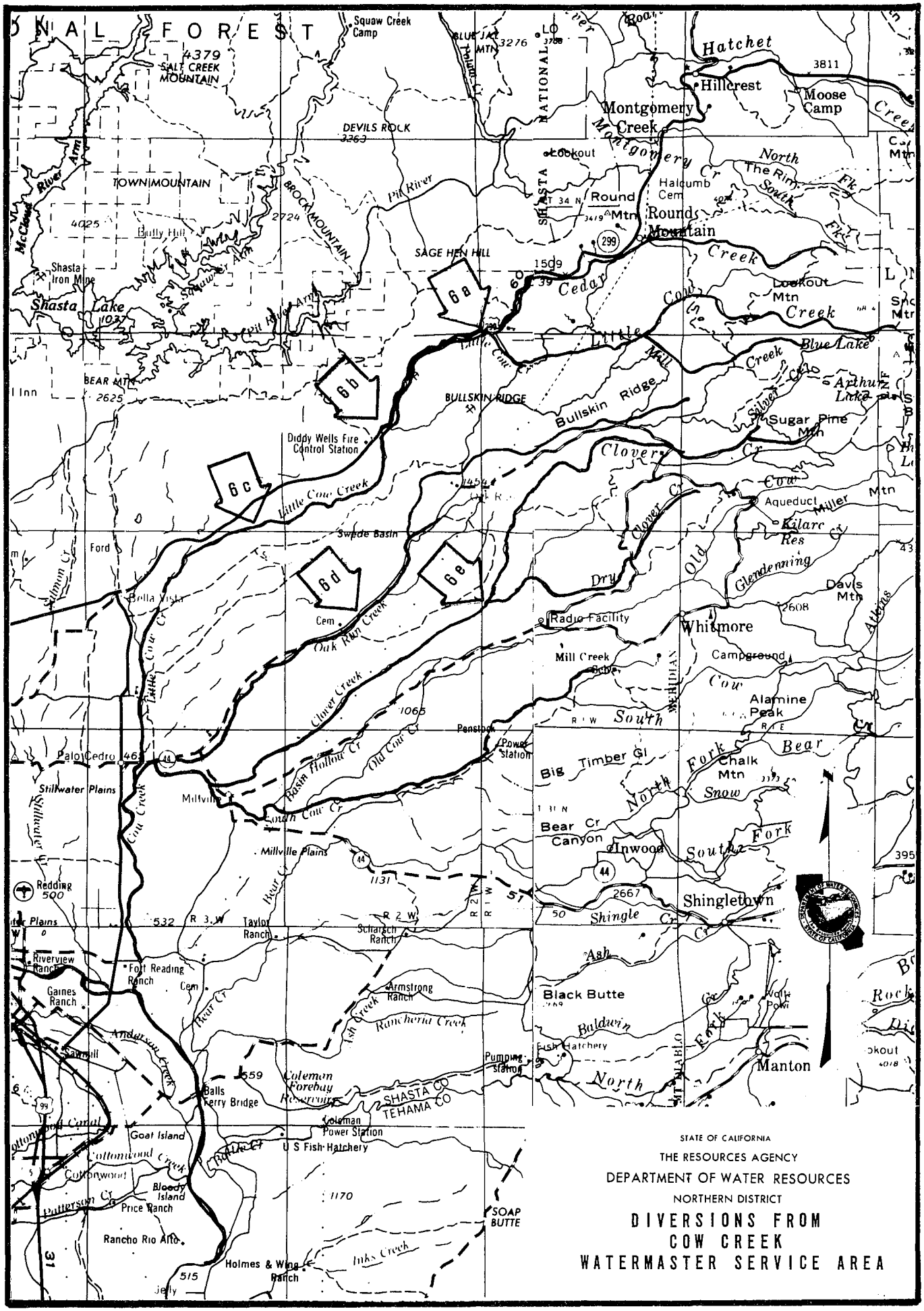
TABLE 12

NORTH COW CREEK NEAR INGOT

Day	March	April	May	June	July	August	September	Day
1			70*	33	14	8.5	6.0	1
2			70	32	15	8.0	6.0	2
3			70	30	14	8.0	6.0	3
4			72	28	13	8.5	6.0	4
5			70	26	12	8.0	5.6	5
6			72	25	11	8.5	5.6	6
7			85	24	10	7.5	6.0	7
8			76	25	11	7.5	6.0	8
9			60	33	11	7.5	6.0	9
10			57	41	11	7.0	6.5	10
11			54	32	10	8.0	6.0	11
12			54	29	10	7.5	5.6	12
13			54	26	10	7.5	5.2	13
14			54	24	10	8.0	5.2	14
15			54	23	9.5	8.5	5.6	15
16			53	23	9.5	9.0	5.2	16
17			52	22	9.5	9.5	5.6	17
18			48	21	10	8.5	6.0	
19			48	20	10	9.0	5.6	19
20			73	20	10	9.0	6.0	20
21			62	19	9.5	9.5	6.0	21
22			49	18	10	8.0	5.6	22
23			46	20	8.5	8.0	5.2	23
24			43	21	8.5	7.5	6.0	24
25			41	19	9.0	6.0	6.5	25
26			41	18	9.0	6.0	6.5	26
27			41	18	9.0	5.6	7.5	27
28			41	17	9.0	6.0	7.5	28
29			39	16	9.0	6.0	8.0	29
30			37	15	9.5	6.5	8.0	30
31			36		8.5	6.5		31
Mean			55.5	23.9	10.3	7.7	6.1	Mean
Runoff In Acre-Feet			3420	1420	635	474	362	Runoff In Acre-Feet

* Beginning of Record

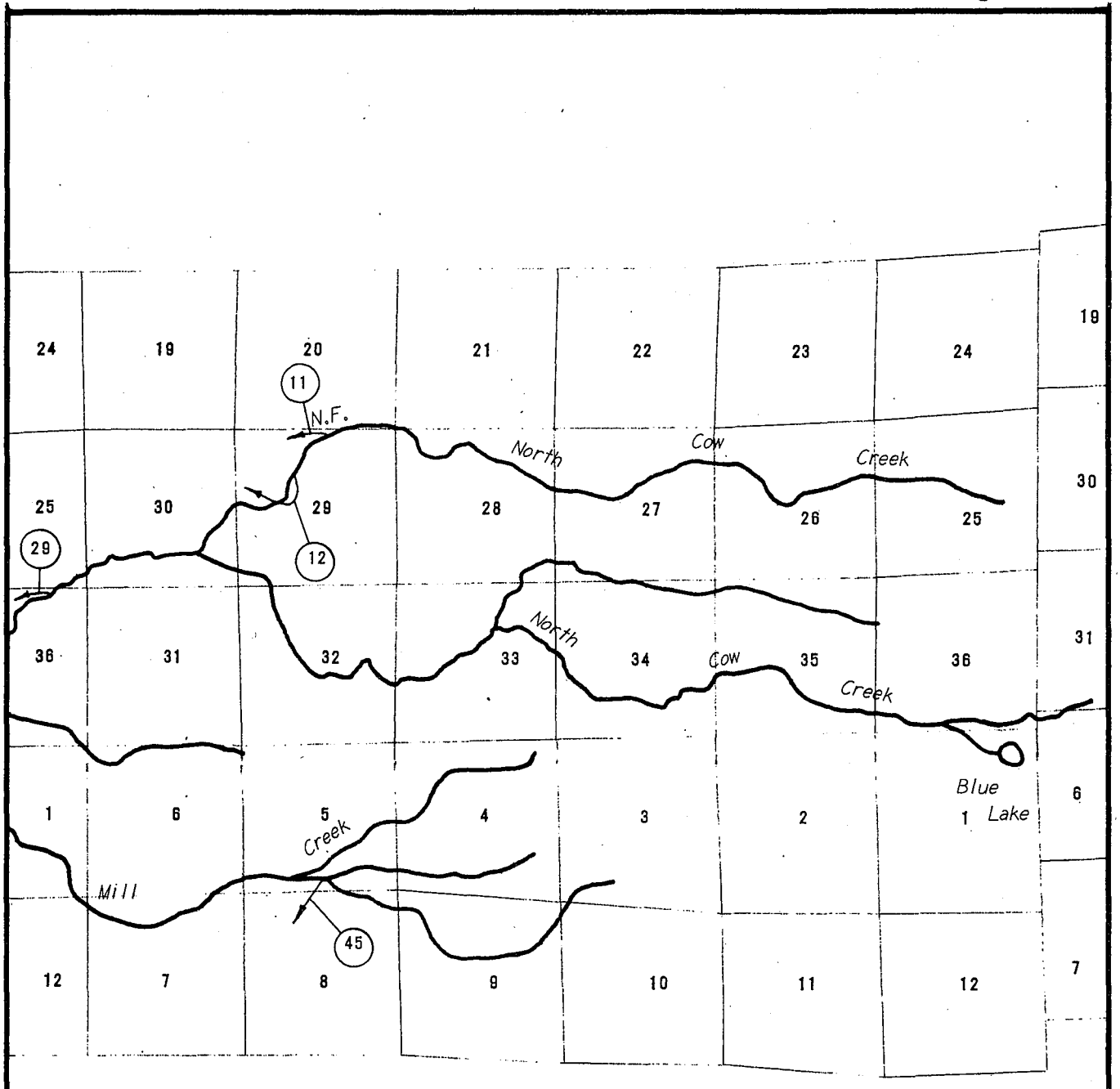
Figure 6



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM COW CREEK WATERMASTER SERVICE AREA

Figure 6a

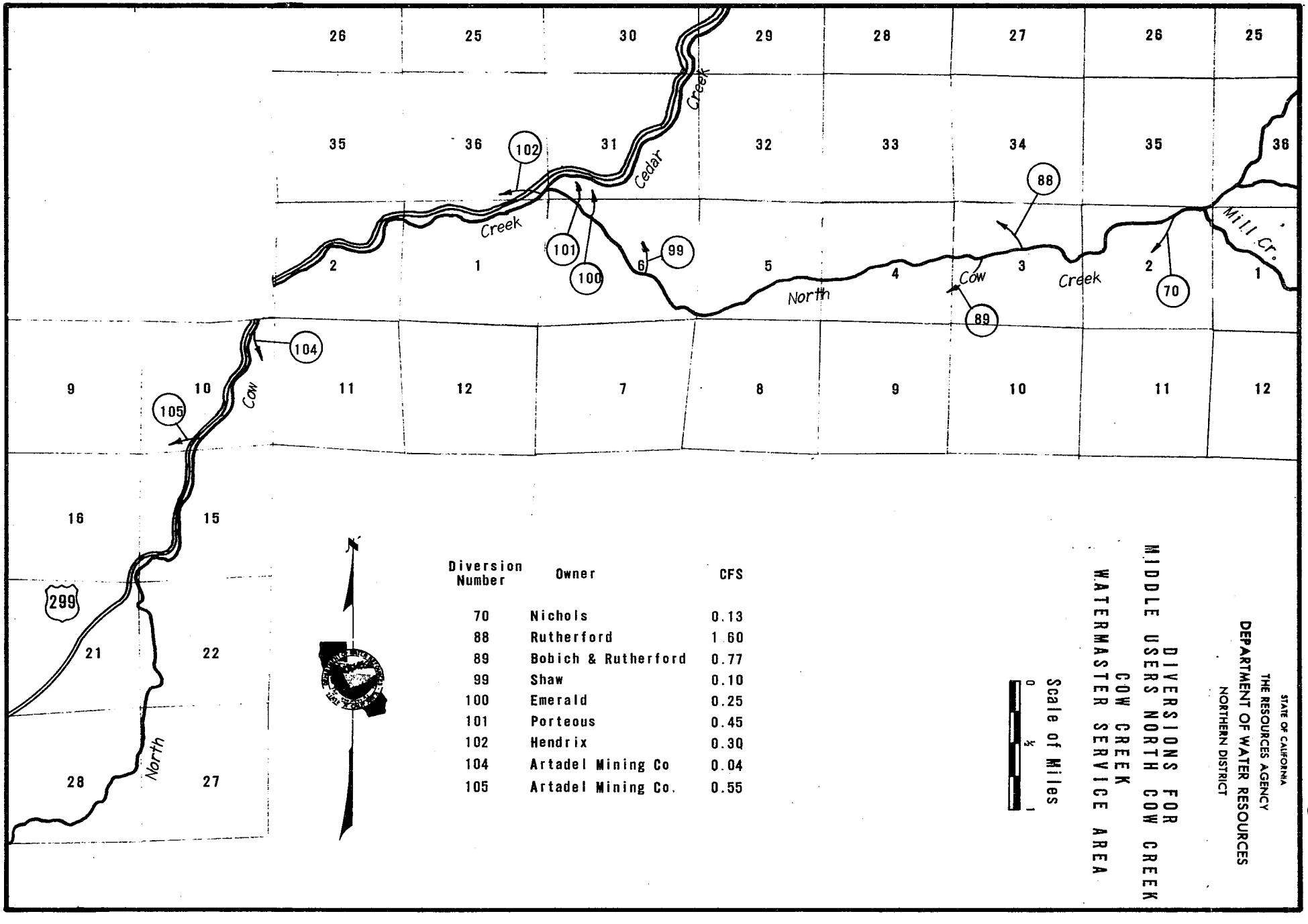


Diversion Number	Owner	CFS
11	McMillan	0.46
12	Benbow	0.63
29	Grant-Pherson-Jones	2.60
45	Export water to Oak Run Creek	5.0

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FOR
UPPER USERS NORTH COW CREEK
COW CREEK
WATERMASTER SERVICE AREA

Scale
0 1/2 1

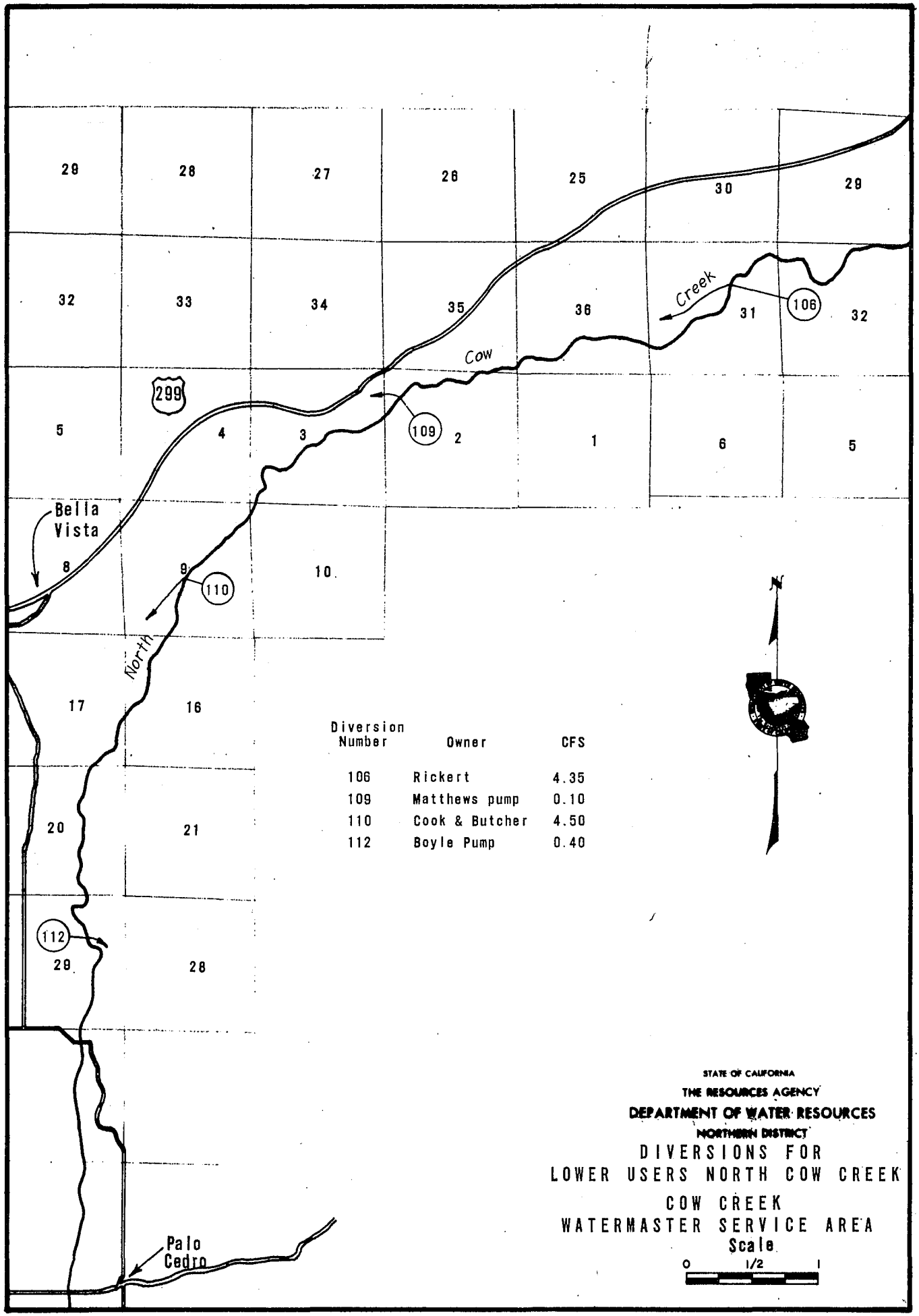


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FOR
MIDDLE USERS NORTH COW CREEK
COW CREEK
WATERMASTER SERVICE AREA

Figure 6b

Figure 6c



Diversion Number	Owner	CFS
106	Rickert	4.35
109	Matthews pump	0.10
110	Cook & Butcher	4.50
112	Boyle Pump	0.40

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FOR LOWER USERS NORTH COW CREEK

COW CREEK WATERMASTER SERVICE AREA

Scale
0 1/2 1

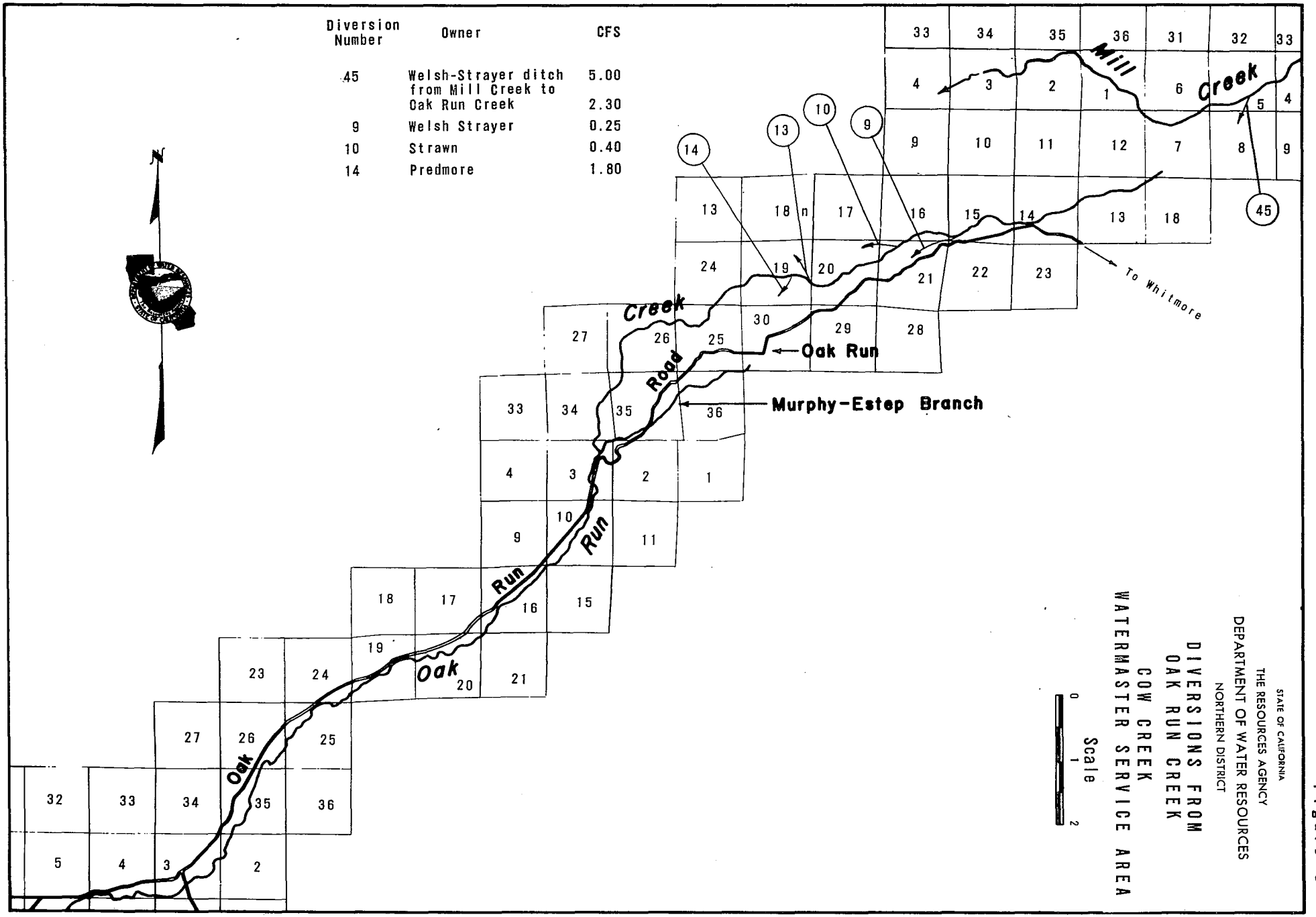

Diversion Number
Owner
CFS
45 Welsh-Strayer ditch from Mill Creek to Oak Run Creek 5.00
2.30
9 Welsh Strayer 0.25
10 Strawn 0.40
14 Predmore 1.80
Mill Creek
Oak Run
Murphy-Estep Branch
Road
To Whitmore
Oak Run
Oak
Creek
Scale
0
1
2
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
OAK RUN CREEK
COW CREEK
WATERMASTER SERVICE AREA

Figure 6d

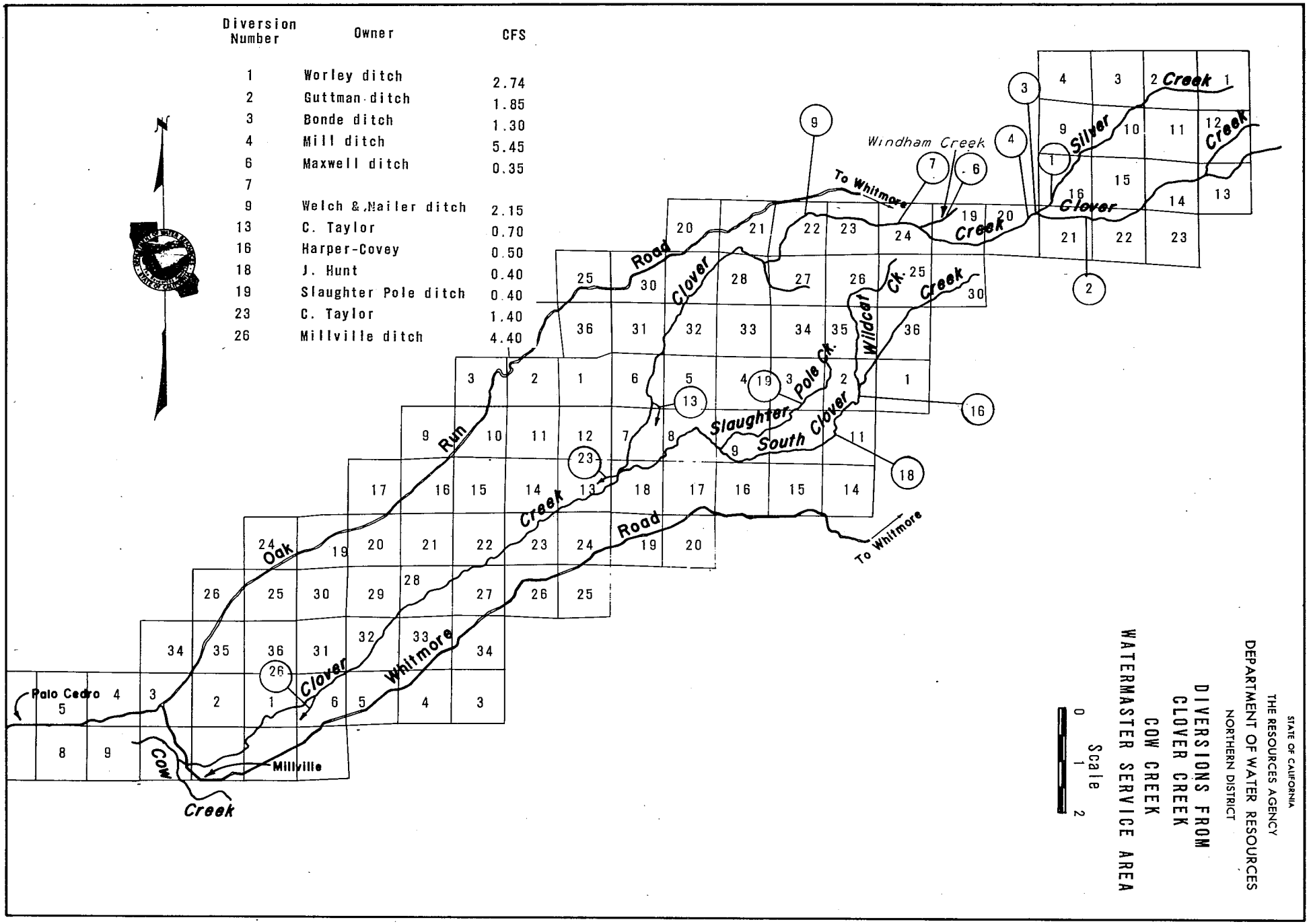

Diversion Number
Owner
CFS
1 Worley ditch 2.74
2 Guttman ditch 1.85
3 Bonde ditch 1.30
4 Mill ditch 5.45
6 Maxwell ditch 0.35
7
9 Welch & Nailer ditch 2.15
13 C. Taylor 0.70
16 Harper-Covey 0.50
18 J. Hunt 0.40
19 Slaughter Pole ditch 0.40
23 C. Taylor 1.40
26 Millville ditch 4.40
N
Windham Creek
To Whitmore
Road
Clover
Creek
Silver
Creek
Glover
Creek
Wildcat
Ck.
Pole Ck.
Slaughter
South Clover
Run
Creek
Oak
Road
Whitmore
To Whitmore
Palo Cedro
Clover
Creek
Millville
Cow
Creek
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
CLOVER CREEK
COW CREEK
WATERMASTER SERVICE AREA
Scale
0 1 2

Figure 6e

Digger Creek Watermaster Service Area

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms a portion of the boundary line between Shasta and Tehama Counties. It drains an area of approximately 45 square miles on the western slopes of mountains situated immediately west of Lassen National Park. The creek flows in a westerly direction through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, is located approximately 40 miles northeast of Red Bluff.

A map of the Digger Creek stream system is presented as Figure 7, page 43.

Basis of Service

The rights on this creek system were determined by four court adjudications and set forth in Decree Nos. 2213, 3214, 3327, and 4570, Shasta and Tehama Counties Superior Courts, and dated August 12, 1899; May 27, 1913; October 16, 1917; and February 24, 1927. The Digger Creek watermaster service area was created June 11, 1964.

The four decrees, in effect, have divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land adjoining the stream so that all water not consumptively used returns to Digger Creek. The lower users are located within a 5-square-mile area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not correlative to the lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first priority allotments, and the lower users have second and third priority allotments.

There are 38 water right owners in the area with total allotments of 23.225 cubic feet per second.

Water Supply

Precipitation, occurring principally in the winter months, is typical of Northern California foothill areas. Snowmelt contributes to the early runoff but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the entire irrigation season. However, serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below the mouth of the South Fork is presented in Table 13, page 42.

Method of Distribution

Irrigation is accomplished principally by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1972 Distribution

Watermaster service began in the Digger Creek service area on June 1 and continued through September. John M. Miller, Water Resources Technician II, was watermaster during this period.

There was a surplus flow of water in Digger Creek until mid-July. At that time the flow was at 100 percent and gradually decreased to 90 percent for the lower users the second week in August. Digger Creek held at 90 percent for the lower users through September.

DIGGER CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

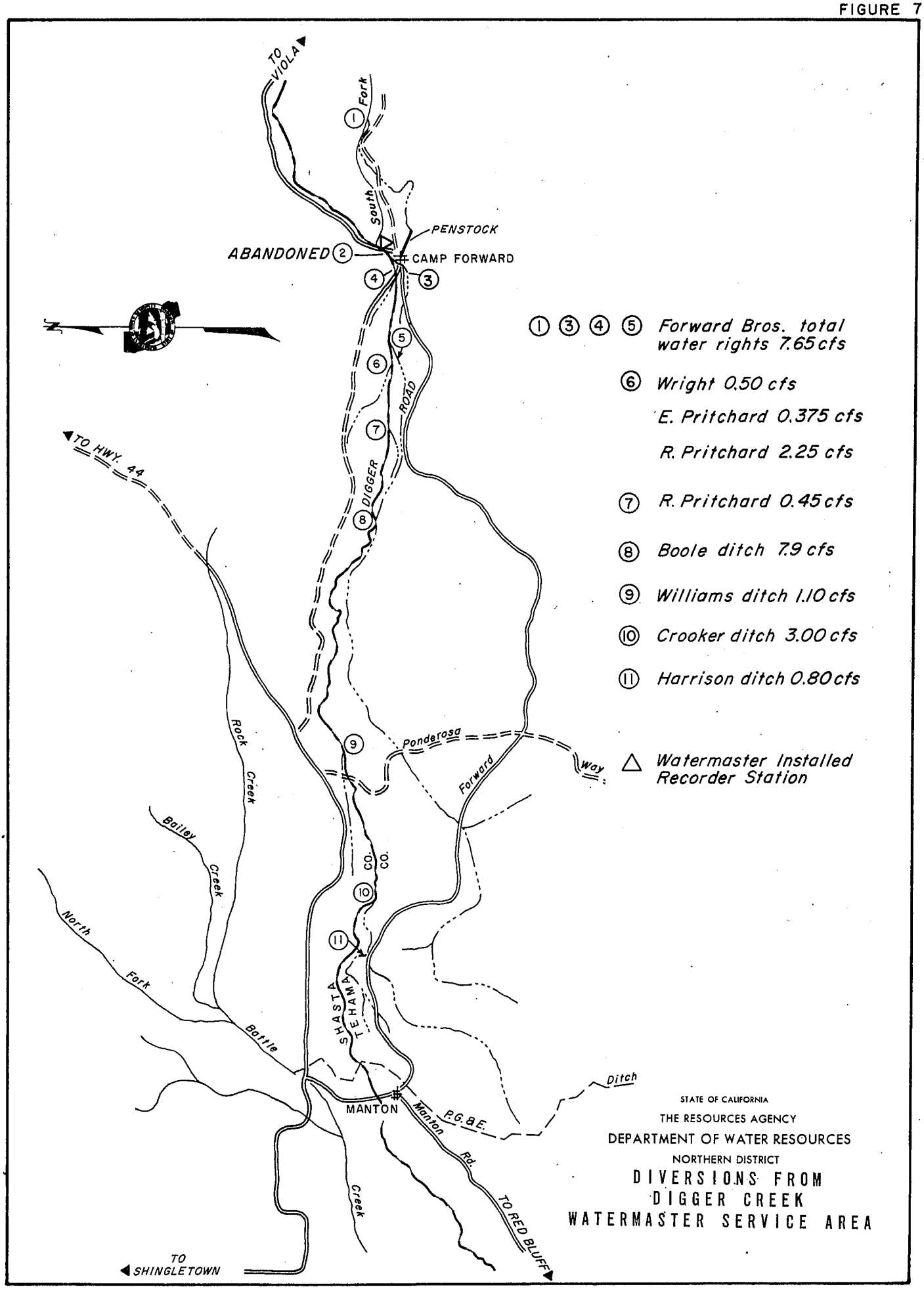
TABLE 13

DIGGER CREEK BELOW SOUTH FORK BRANCH

Day	March	April	May	June	July	August	September	Day
1					23	16	14	1
2					22	16	14	2
3					22	16	13	3
4					22	15	13	4
5					22	15	14	5
6					20	15	14	6
7					20	15	13	7
8					19	15	13	8
9					19	15	13	9
10					18	15	13	10
11					19	15	14	11
12					19	15	14	12
13					19	15	13	13
14					18	15	13	14
15				29*	18	15	13	15
16				30	18	17	13	16
17				30	18	16	13	17
18				29	17	16	13	18
19				29	17	15	13	19
20				28	18	15	13	20
21				27	18	15	13	21
22				27	18	14	13	22
23				27	18	14	13	23
24				27	18	14	13	24
25				27	18	14	13	25
26				26	17	14	16	26
27				25	17	14	32	27
28				25	17	14	16	28
29				24	17	14	14	29
30				24	16	14	13	30
31					16	14		31
Mean				27.1	18.6	14.9	14.0	Mean
Runoff In Acre-Feet				861	1146	916	837	Runoff In Acre-Feet

* Beginning of Record

FIGURE 7


TO VIOLA
Fork
South
PENSTOCK
ABANDONED
CAMP FORWARD
DIGGER
ROAD
TO HWY. 44
Rock Creek
Bailey Creek
North Fork
Battle
Ponderosa Way
Forward
CO.
CO.
SHASTA
TEHAMA
MANTON
P.G. & E.
Manton Rd.
TO RED BLUFF
Ditch
Creek
TO SHINGLETOWN
① ③ ④ ⑤ Forward Bros. total water rights 7.65 cfs
⑥ Wright 0.50 cfs
E. Pritchard 0.375 cfs
R. Pritchard 2.25 cfs
⑦ R. Pritchard 0.45 cfs
⑧ Boole ditch 7.9 cfs
⑨ Williams ditch 1.10 cfs
⑩ Crooker ditch 3.00 cfs
⑪ Harrison ditch 0.80 cfs
△ Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM DIGGER CREEK WATERMASTER SERVICE AREA

French Creek Watermaster Service Area

The French Creek service area is situated in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows in a northeasterly direction through the central part of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about 3 miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1 mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin, and some additional lands along the west side of the Scott River near the town of Etna. The service area is about 1/2 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

A map of the French Creek stream system with the diversions and roads is presented as Figure 8, page 47.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

Water is distributed according to three schedules: North Fork French Creek with three priorities; Miners Creek with three; and the French Creek, Paynes Lake Creek, Horse Lake Creek and Duck Lake Creek system with seven.

The above schedules are independent of each other with two exceptions. These involve the case of Miners Creek rights having the option to divert from the French Creek group when water is not available from Miners Creek. These rights are further limited by specifying maximum allowable flows at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount but are subject to the exclusive control of the other owners of the ditch.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

There are 27 water users in the service area with water rights totaling 30.59 cubic feet per second.

Water Supply

The water supply is derived from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep, mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of Duck Lake Creek, a tributary, is presented in Table 14, page 46.

Method of Distribution

Irrigation is accomplished primarily by wild flooding, with permanent pasture

and alfalfa fields comprising the major crops. Water is conveyed by ditches and laterals to the place of use.

1972 Distribution

Watermaster George H. Pape, Associate Engineer, Water Resources, was on duty in the French Creek service area from July 1 until September 30.

Because watermaster service was initiated during the 1969 season, little data is available for a water supply comparison with past years. However, it is the opinion of most ranchers in the area that water-year conditions were somewhat below average.

Upper third priority allotments were shut off on August 20 to satisfy the upper second priority rights. However, some third priority allotments lower down were available throughout the remainder of the season.

Those with downstream first, second, and third priority allotments can rely on a more dependable water supply than the upper users due to inflow from Paynes Lake, Horse Range, and North Fork French Creeks, all tributaries to French Creek below the upper users.

FRENCH CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

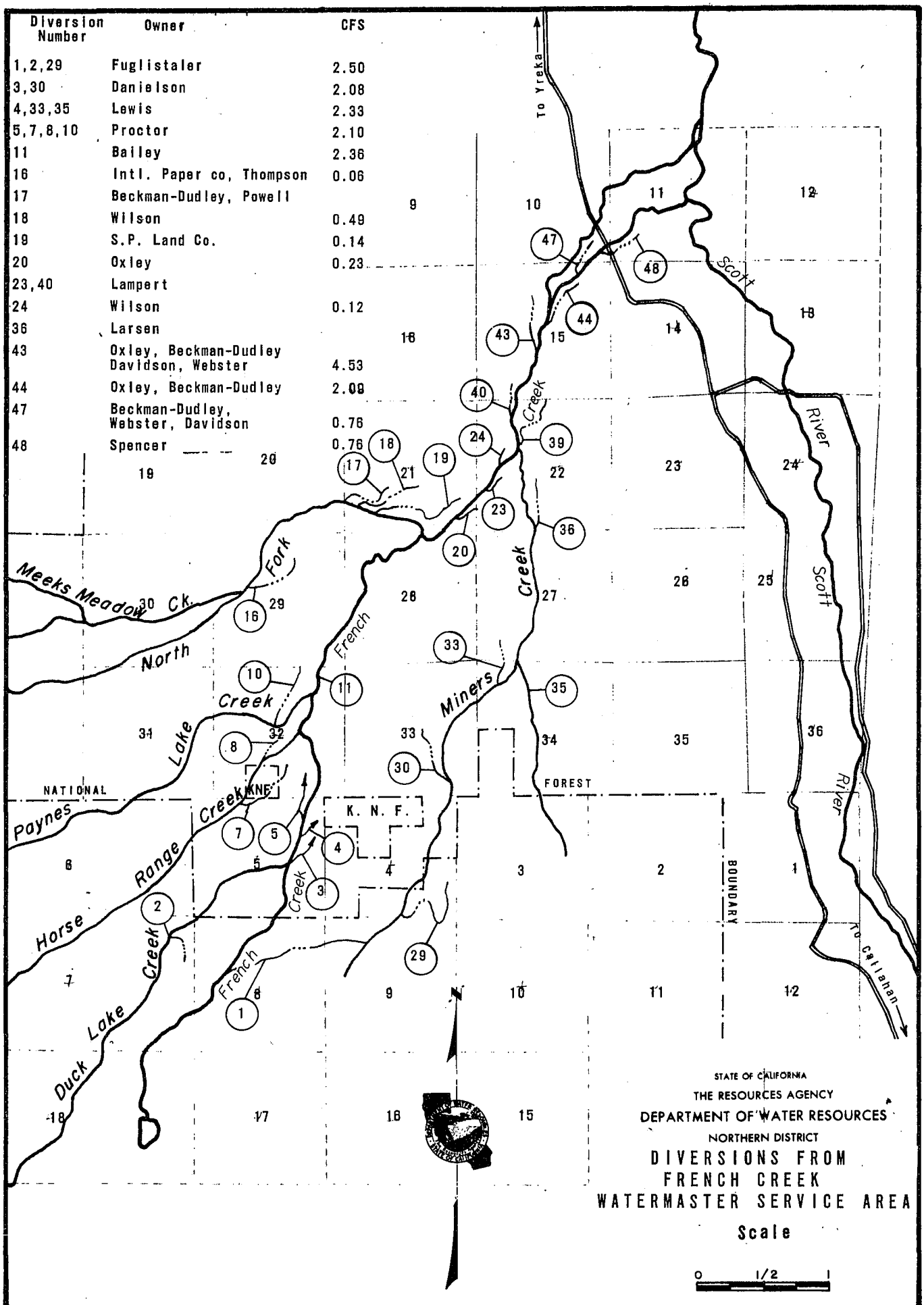
TABLE 14

DUCK LAKE CREEK TRIBUTARY TO FRENCH CREEK

Day	March	April	May	June	July	August	September	Day
1				10	7.0	2.5	1.1	1
2				9.5	7.1	2.3	0.9	2
3				9.3	6.8	2.3	0.9	3
4				9.4	6.7	2.1	0.8	4
5				9.4	6.7	2.1	0.8	5
6				12	6.5	1.9	0.9	6
7				11	6.8	1.9	0.9	7
8				9.1	6.2	1.8	0.6	8
9				8.9	6.1	1.8	0.6	9
10				14	5.7	1.8	0.6	10
11			12*	13	5.5	1.8	0.7	11
12			14	10	5.5	1.6	0.7	12
13			14	11	5.1	1.7	0.7	13
14			13	9.5	4.8	1.3	0.7	14
15			12	9.2	4.8	1.6	0.7	15
16			10	8.9	4.4	1.6	0.7	16
17			15	8.9	4.1	1.5	0.6	17
18			15	9.2	4.0	1.4	0.6	18
19			16	9.5	4.1	1.5	0.6	19
20			15	9.0	3.6	1.4	0.6	20
21			12	9.0	3.4	1.3	0.8	21
22			10	8.5	3.4	1.3	0.8	22
23			10	8.5	3.2	1.3	0.8	23
24			11	8.7	3.0	1.2	0.8	24
25			11	8.4	3.1	1.1	0.7	25
26			14	8.0	3.0	1.1	0.6	26
27			14	8.1	2.8	1.1	0.6	27
28			10	7.9	2.8	1.1	0.6**	28
29			11	7.2	2.6	1.1		29
30			10	7.2	2.4	1.1		30
31			10		2.5	1.1		31
Mean			11.3	9.4	4.6	1.6	0.7	Mean
Runoff In Acre-Feet			514	560	285	97	40	Runoff In Acre-Feet

* Beginning of Record
** End of Record

Figure 8


Diversion Number | Owner | CFS
1,2,29 | Fuglistaler | 2.50
3,30 | Danielson | 2.08
4,33,35 | Lewis | 2.33
5,7,8,10 | Proctor | 2.10
11 | Bailey | 2.36
16 | Intl. Paper co, Thompson | 0.06
17 | Beckman-Dudley, Powell
18 | Wilson | 0.49
19 | S.P. Land Co. | 0.14
20 | Oxley | 0.23
23,40 | Lampert
24 | Wilson | 0.12
36 | Larsen
43 | Oxley, Beckman-Dudley Davidson, Webster | 4.53
44 | Oxley, Beckman-Dudley | 2.09
47 | Beckman-Dudley, Webster, Davidson | 0.76
48 | Spencer | 0.76
To Yreka
Scott River
Meeks Meadow Ck.
North Fork
French Creek
Miners Creek
Lake Paynes Creek
Horse Range Creek
Duck Lake Creek
French Creek
NATIONAL FOREST
K. N. F.
BOUNDARY
To Callahan
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM FRENCH CREEK WATERMASTER SERVICE AREA
Scale
0 1/2 1

Hat Creek Watermaster Service Area

The Hat Creek service area is in the eastern part of Shasta County north of Lassen Volcanic National Park. The maps, Figures 9 through 9b, pages 51 through 53, show the Hat Creek service area and stream system, including locations of the diversions of the upper and lower user groups.

Hat Creek, which flows in a northerly direction through the area, is the only source of water supply in the service area. The place of use is Hat Creek Valley, which is approximately 20 miles long and 2 miles wide, extending northward from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta County Superior Court.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929. The decree defines the allotments in two separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and terminating at 6 a.m., October 28. All water rights are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 154.7 cubic feet per second and the lower users require 166.5 cubic feet per second. The lower users require more because of additional channel loss. When the upper users are being served, the lower users receive a minimum flow for stockwater.

Water Supply

The water supply of Hat Creek is derived from snowmelt runoff from Lassen Peak and from large springs. Snowmelt normally creates a high flow during May and June, but the substantial portion of the summer supply comes from large springs which decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

A record of the daily mean discharge of Hat Creek near the town of Hat Creek is presented in Table 15, page 50.

Method of Distribution

Most irrigation in the area is accomplished by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams constructed across the creek serve to divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditch or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

1972 Distribution

Virgil Buechler, Water Resources Technician II, served as watermaster in the Hat Creek service area from May 1 until September 30, 1972.

The available water supply for Hat Creek was about average. The snowpack on Lassen Peak was near normal. The flow of the springs tributary to Hat Creek was above normal. The flow in Hat Creek near Old Station was in excess of 145 cubic feet per second throughout the summer.

The usual 10-day rotation schedule was not initiated until July 30. During

this rotation, the lower users received 100 percent of their allotments (one priority). The August 9 rotation to the lower users was on a 95-percent basis. Then the flow in the creek increased and the remainder of the 10-day rotations were on a 100-percent basis.

HAT CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 15

HAT CREEK NEAR HAT CREEK

Day	March	April	May	June	July	August	September	Day
1	167	168	170	227	164	154	143	1
2	176	170	172	217	163	155	144	2
3	194	172	179	212	162	154	144	3
4	186	175	183	208	160	154	146	4
5	181	203	191	212	158	154	146	5
6	177	194	196	214	157	154	147	6
7	176	183	197	220	155	154	150	7
8	175	177	190	215	154	154	152	8
9	177	175	187	209	154	148	153	9
10	180	174	190	204	157	141	154	10
11	179	175	193	190	159	141	157	11
12	177	170	196	187	159	142	158	12
13	180	170	203	187	159	144	155	13
14	179	172	212	190	159	146	154	14
15	177	172	222	187	158	146	154	15
16	179	172	217	186	157	148	154	16
17	181	170	214	184	155	148	154	17
18	183	168	203	181	155	148	149	18
19	180	168	196	181	155	150	144	19
20	177	167	196	186	150	154	146	20
21	177	167	186	187	149	153	146	21
22	183	168	183	184	149	154	146	22
23	177	170	186	183	148	154	146	23
24	176	172	188	180	149	153	147	24
25	176	168	191	176	149	152	149	25
26	171	168	198	175	149	152	150	26
27	171	170	206	174	148	152	167	27
28	170	170	220	171	147	150	157	28
29	170	167	228	168	147	146	155	29
30	168	167	228	167	153	141	152	30
31	168		232		155	142		31
Mean	177	173	198	192	155	150	151	Mean
Runoff In Acre-Feet	10890	10280	12200	11430	9510	9200	8960	Runoff In Acre-Feet

Figure 9

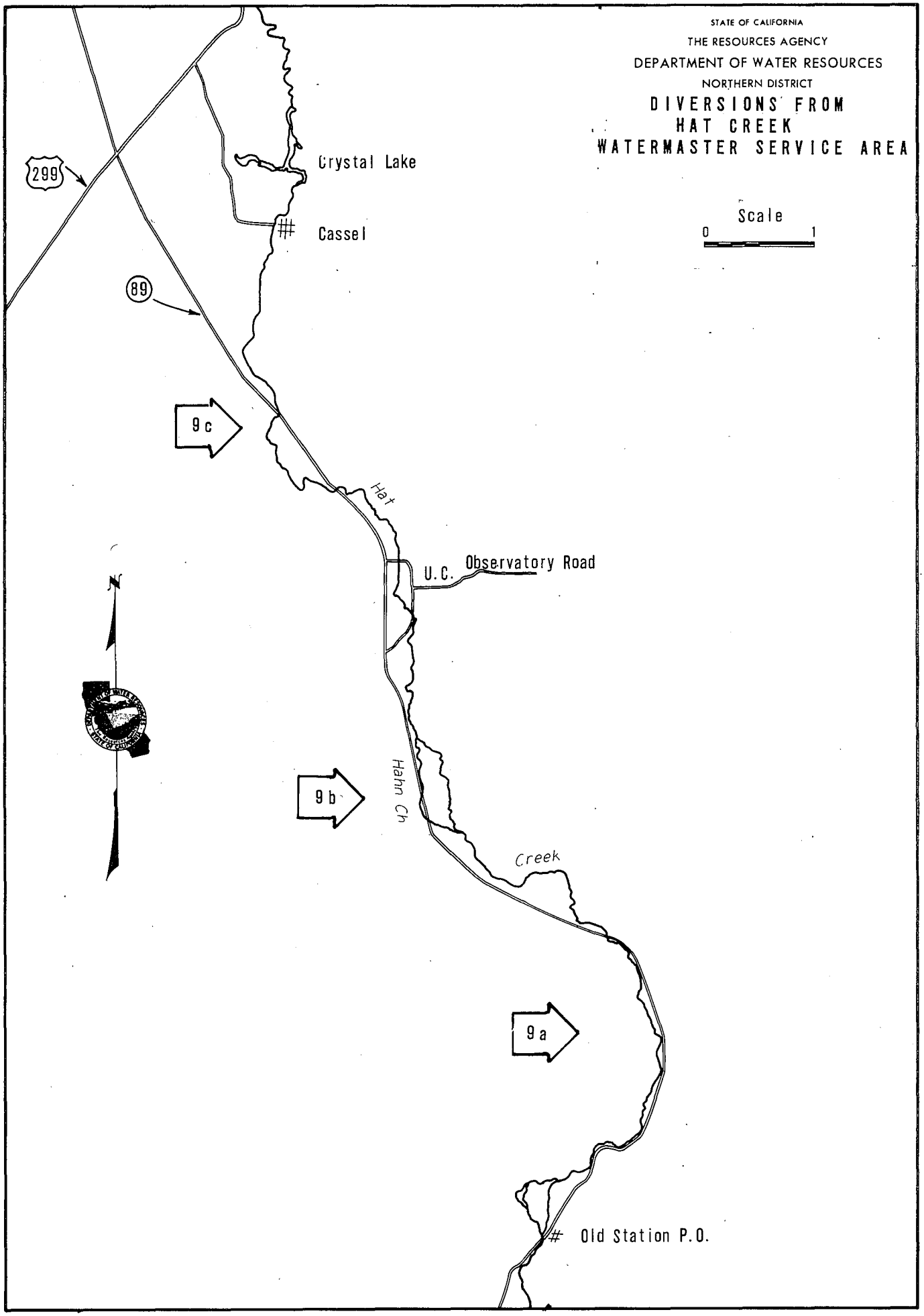
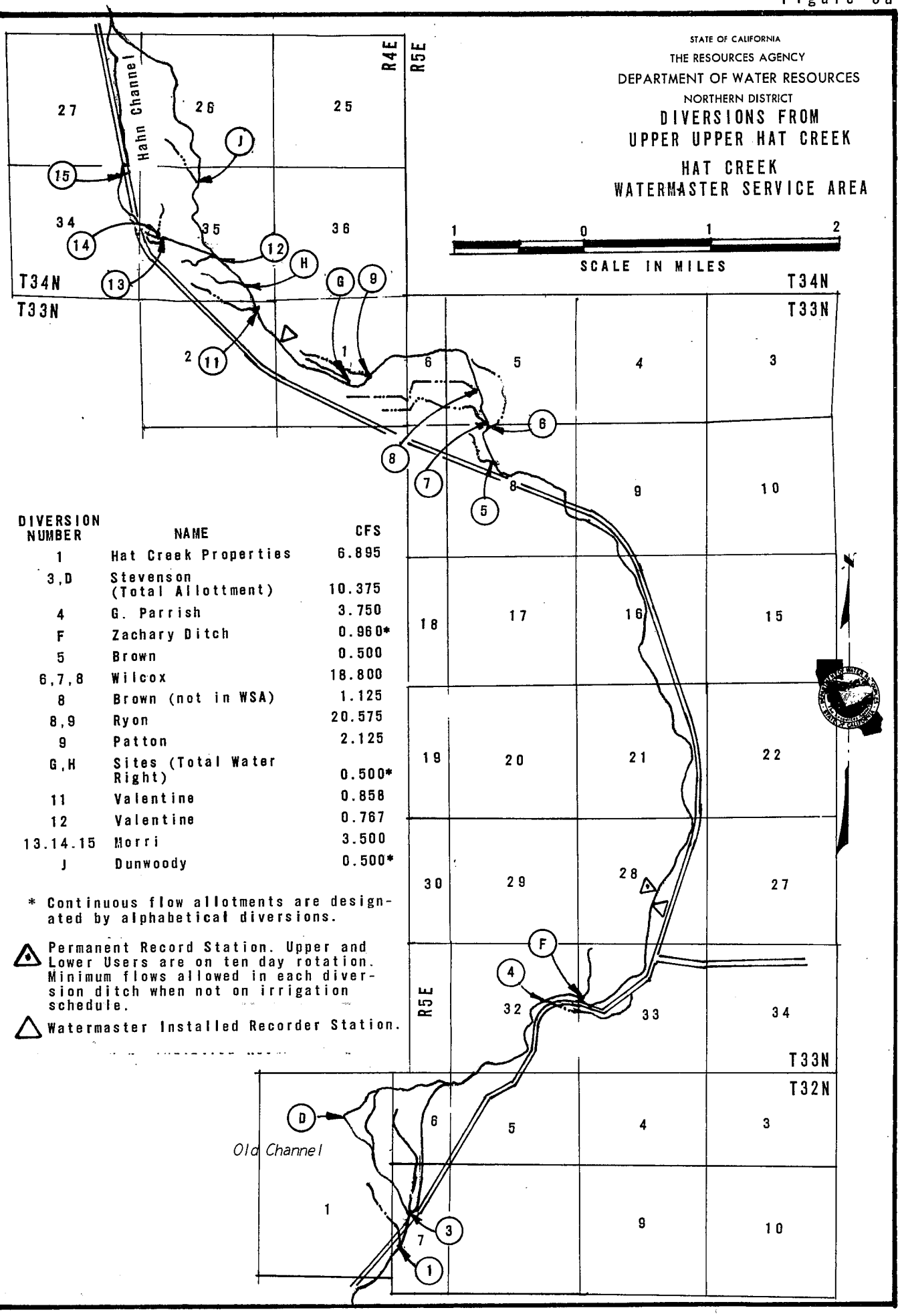

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
HAT CREEK
WATERMASTER SERVICE AREA
Scale
0
1
299
89
Crystal Lake
Cassel
9c
9b
9a
Hat
Creek
U.C. Observatory Road
Hahn Ch
Old Station P.O.

Figure 9a



DIVERSION NUMBER	NAME	CFS
1	Hat Creek Properties	6.895
3,D	Stevenson (Total Allottment)	10.375
4	G. Parrish	3.750
F	Zachary Ditch	0.960*
5	Brown	0.500
6,7,8	Wilcox	18.800
8	Brown (not in WSA)	1.125
8,9	Ryon	20.575
9	Patton	2.125
G,H	Sites (Total Water Right)	0.500*
11	Valentine	0.858
12	Valentine	0.767
13.14.15	Morri	3.500
J	Dunwoody	0.500*

* Continuous flow allotments are designated by alphabetical diversions.

△ Permanent Record Station. Upper and Lower Users are on ten day rotation. Minimum flows allowed in each diversion ditch when not on irrigation schedule.

△ Watermaster Installed Recorder Station.

Figure 9b

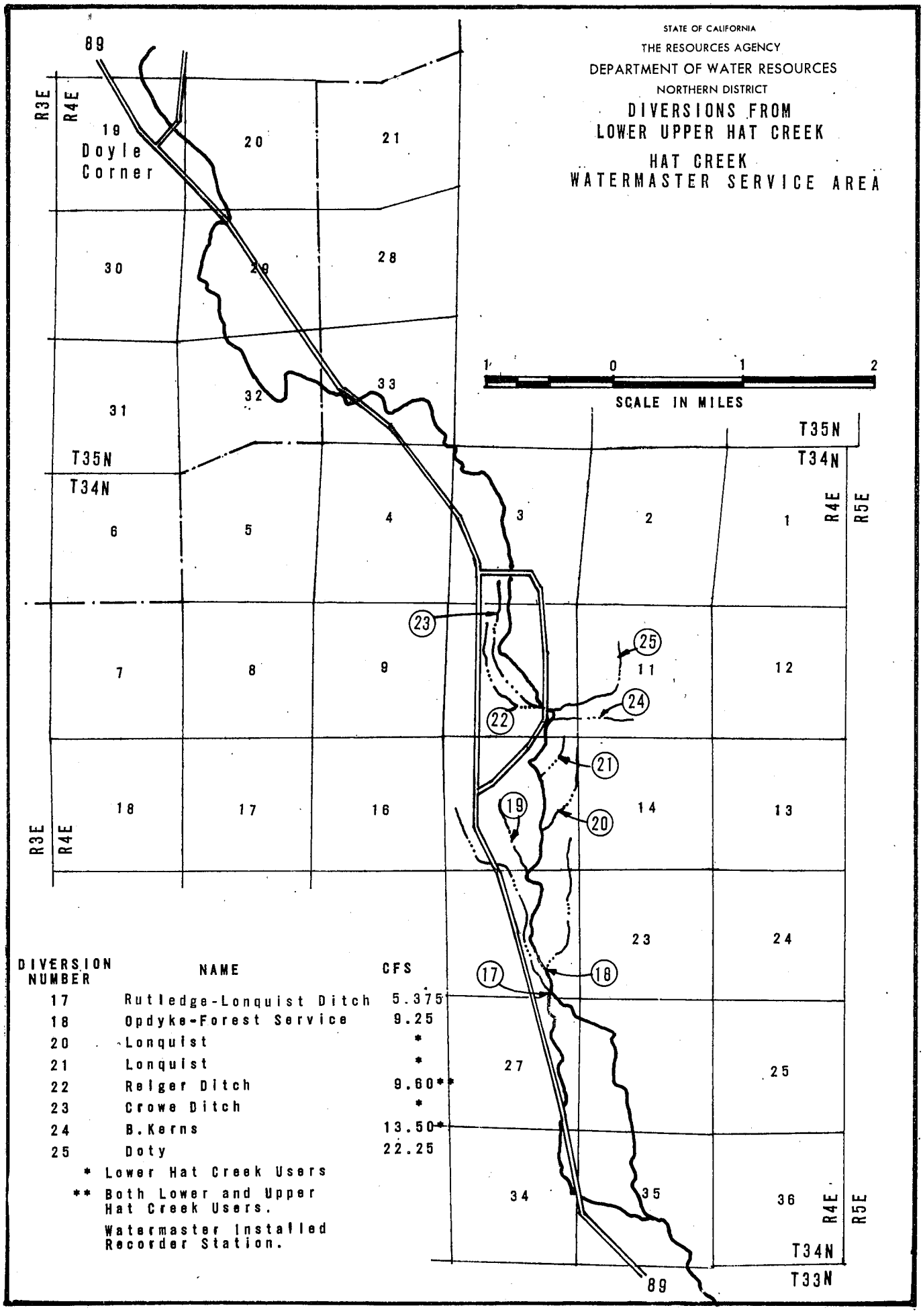
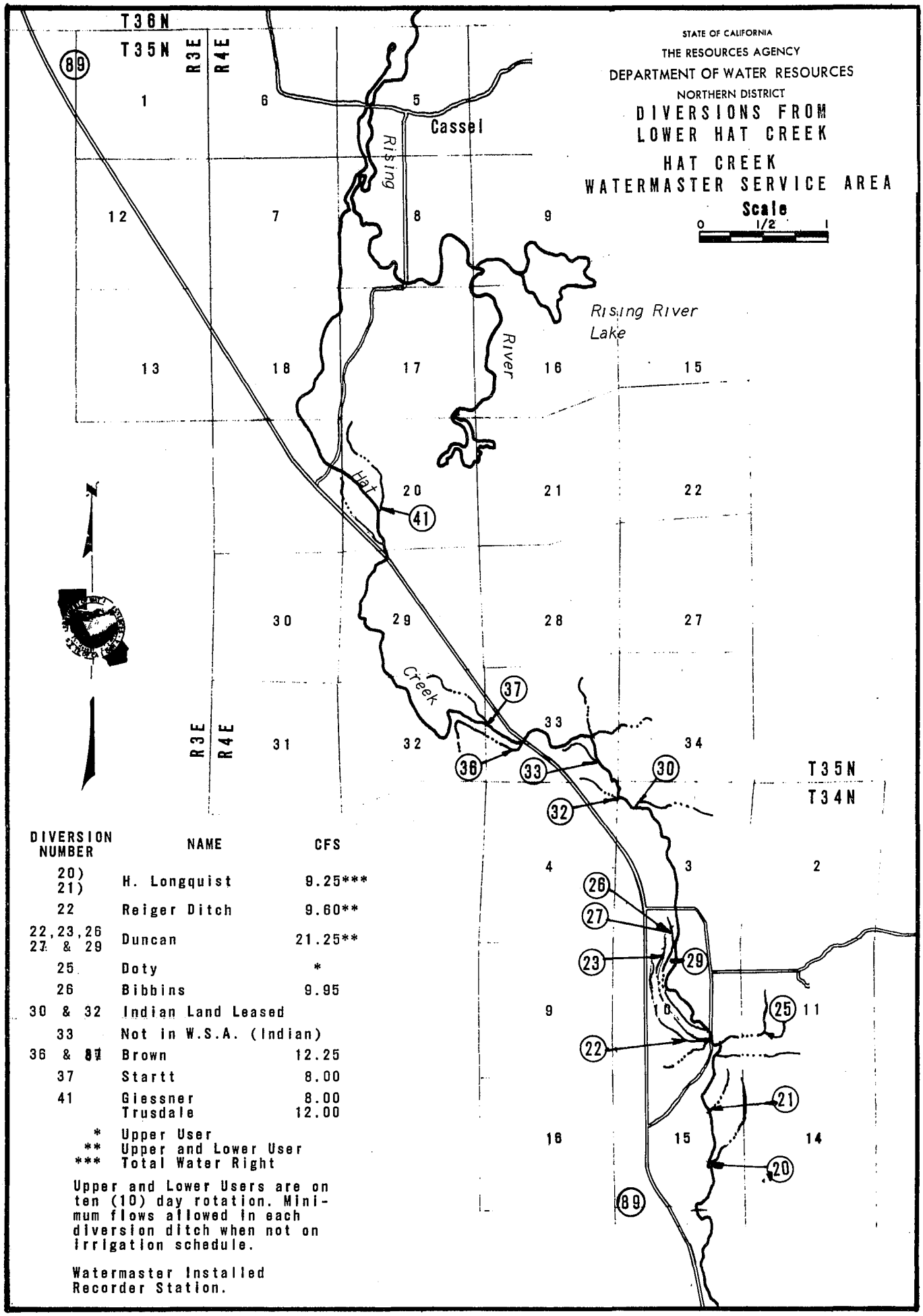

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
LOWER UPPER HAT CREEK
HAT CREEK
WATERMASTER SERVICE AREA
SCALE IN MILES
1 0 1 2
89
R3E
R4E
R5E
T35N
T34N
T33N
Doyle
Corner
DIVERSION NUMBER
NAME
CFS
17 Rutledge-Lonquist Ditch 5.375
18 Opdyke-Forest Service 9.25
20 Lonquist *
21 Lonquist *
22 Reiger Ditch 9.60**
23 Crowe Ditch *
24 B.Kerns 13.50*
25 Doty 22.25
* Lower Hat Creek Users
** Both Lower and Upper Hat Creek Users.
Watermaster Installed Recorder Station.

Figure 9c



DIVERSION NUMBER	NAME	CFS
20) 21)	H. Longquist	9.25***
22	Reiger Ditch	9.60**
22,23,26 27 & 29	Duncan	21.25**
25	Doty	*
26	Bibbins	9.95
30 & 32	Indian Land Leased	
33	Not in W.S.A. (Indian)	
36 & 37	Brown	12.25
37	Startt	8.00
41	Giessner	8.00
	Trusdale	12.00

* Upper User
** Upper and Lower User
*** Total Water Right

Upper and Lower Users are on ten (10) day rotation. Minimum flows allowed in each diversion ditch when not on irrigation schedule.

Watermaster Installed Recorder Station.

Indian Creek Watermaster Service Area

The Indian Creek service area is located in the north central part of Plumas County in the vicinity of the town of Greenville.

The major sources of supply in the service area are Indian Creek and two major tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It then flows through Gennessee Valley and through Indian Valley past the towns of Taylorsville and Crescent Mills to its confluence with the North Fork Feather River. Indian Creek is joined from the north by Lights Creek and Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, which is about 4 miles long and 2-1/2 miles wide. The average elevation is about 3,500 feet.

A map of each major stream system within the Indian Creek service area is presented as Figures 10 through 10c, pages 57 through 60.

Basis of Service

The water rights of the Indian Creek stream system were set forth in Decree No. 4185, entered by the Superior Court of Plumas County December 19, 1950. The decree establishes three priority classes for each of the major streams within the service area.

The Indian Creek watermaster service area was created on February 19, 1951, to include these rights, with certain exceptions, and the rights under Permit 7665 issued in approval of Application 12642 subsequent to entry of the decree. The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created.

There are currently 45 water right owners in the service area with total allotments amounting to 97.015 cubic feet per second.

Water Supply

The water supply in the Indian Creek service area is derived primarily from snowmelt runoff with springs and seepage maintaining some late summer flow. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1, while Indian and Lights Creeks, with the exception of some tributaries, have sufficient flow to supply all allotments until July 1. After these dates, the flow steadily decreases throughout the season until by the end of August only a small portion of allotments is available.

A record of the daily mean discharge of Indian Creek near Taylorsville is presented in Table 16, page 56.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are placed in the stream channels to divert the water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley. A few sprinkling systems are also in use.

1972 Distribution

Watermaster service began in the Indian Creek service area on April 15 and continued until September 30, with Harvey M. Jorgensen, Water Resources Engineering Associate, as watermaster.

The available supply in the service area was below average during the season.

Wolf Creek. The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) until July 30. The streamflow gradually decreased until only first priority allotments were being served on August 15.

Lights Creek and Tributaries. The available water supply of Lights Creek was sufficient to satisfy all allotments (three priorities) until July 10. The available water supply of Cooks Creek satisfied all allotments until July 15.

Indian Creek. The available water supply was sufficient to satisfy all allotments (three priorities) until July 10.

Special Occurrences

Control devices or orifices were not needed at Diversion 54 or 55, due to the fact that Antelope Reservoir did not spill on May 1 and the project release was set at 5.0 cubic feet per second as required. The inflow was equal to or slightly below this amount and the seepage and leakage past these diversions was sufficient to satisfy the project operations criteria.

INDIAN CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 16

INDIAN CREEK NEAR TAYLORSVILLE

Day	March	April	May	June	July	August	September	Day
1	874	292	413	249	66	37	37	1
2	891	288	324	228	61	37	37	2
3	1890	297	339	212	60	38	40	3
4	2010	343	369	194	59	37	46	4
5	1580	582	420	183	56	36	48	5
6	1230	716	453	174	54	36	46	6
7	1160	550	462	169	52	36	45	7
8	1030	482	444	166	51	34	42	8
9	1060	413	426	164	47	33	40	9
10	1230	375	408	161	47	31	40	10
11	1150	366	402	149	46	29	42	11
12	986	484	394	142	46	29	47	12
13	876	477	403	134	45	30	46	13
14	810	475	417	130	43	30	45	14
15	723	555	424	124	43	30	42	15
16	679	585	415	118	41	32	38	16
17	693	513	399	113	41	34	37	17
18	691	455	368	108	40	34	36	18
19	612	398	429	98	39	33	36	19
20	555	383	458	88	42	34	36	20
21	531	406	440	88	44	35	39	21
22	532	399	417	87	43	35	39	22
23	517	403	345	86	41	33	41	23
24	448	403	318	86	40	32	41	24
25	472	464	301	85	40	33	42	25
26	413	446	295	84	38	31	49	26
27	371	441	299	81	38	34	61	27
28	345	454	307	75	38	34	58	28
29	335	448	307	72	38	35	55	29
30	311	438	290	69	38	36	50	30
31	298		274		37	37		31
Mean	816	444	379	130	45.6	33.7	43.4	Mean
Runoff In Acre-Feet	50188	26442	23326	7769	2805	2073	2580	Runoff In Acre-Feet

FIGURE 10

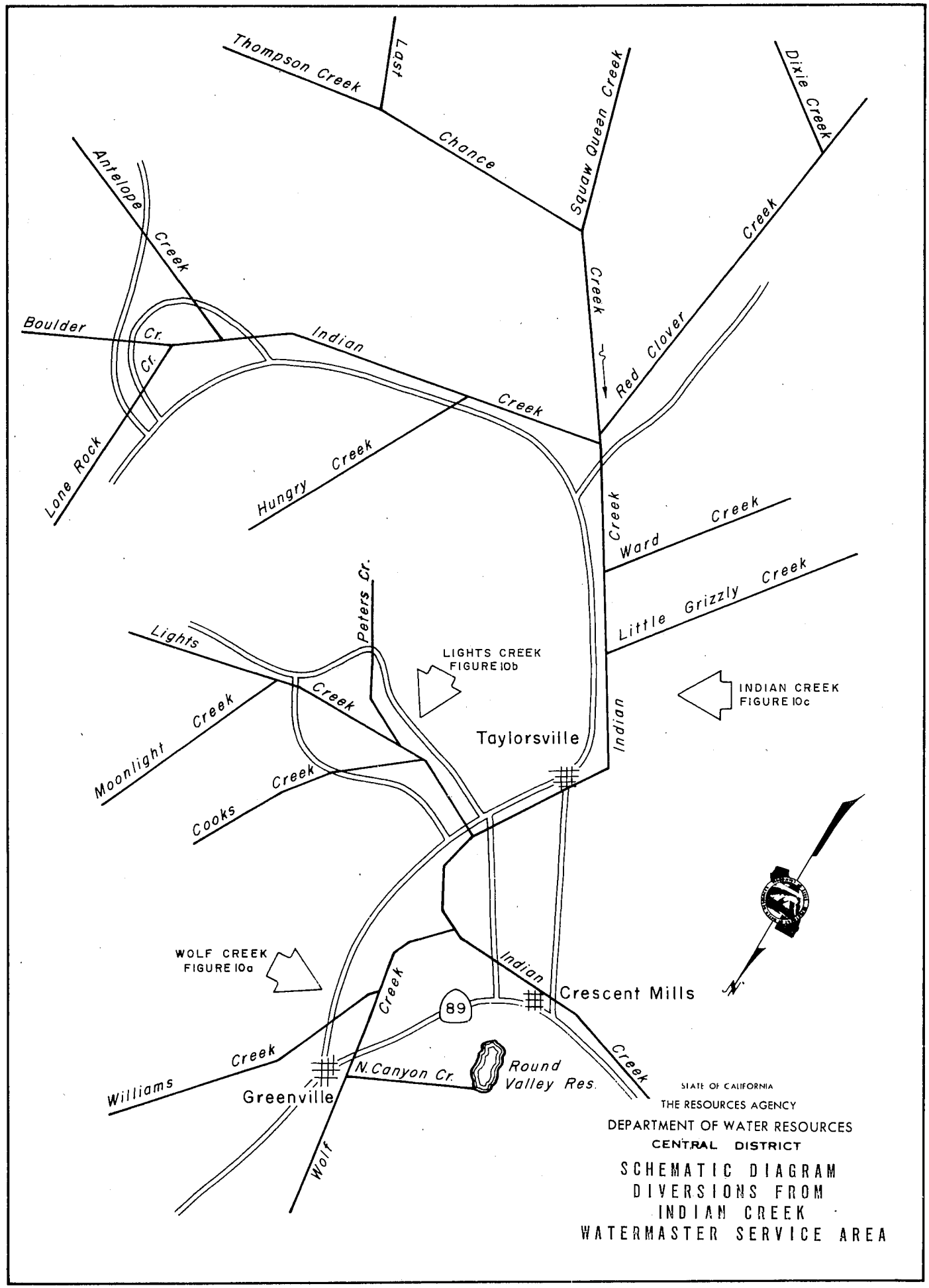
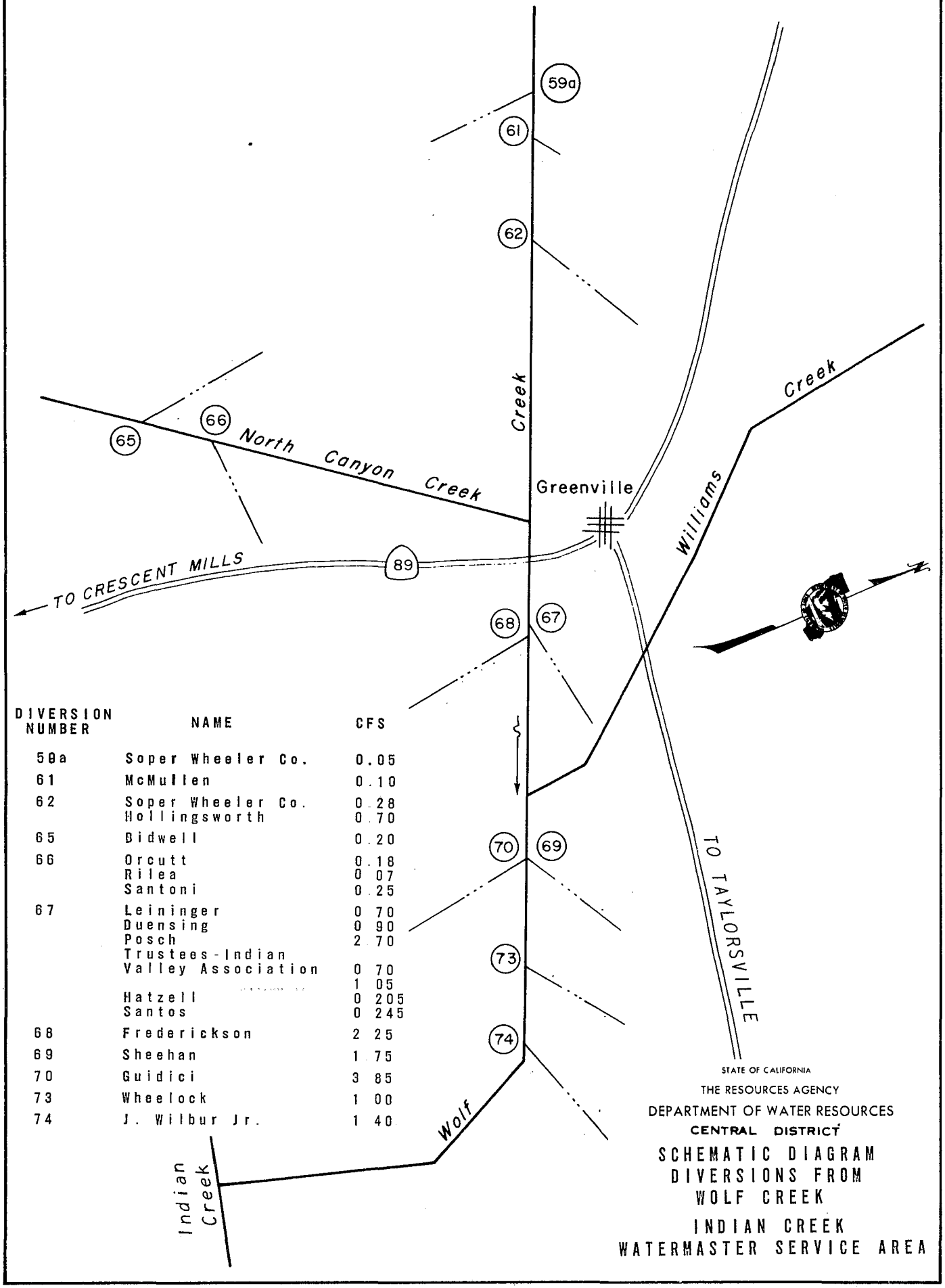

Thompson Creek
Last
Chance
Squaw Queen Creek
Dixie Creek
Antelope
Creek
Boulder
Cr.
Cr.
Indian
Creek
Red Clover
Creek
Creek
Lone Rock
Hungry Creek
Creek
Ward
Creek
Little Grizzly Creek
Peters Cr.
Lights
Creek
LIGHTS CREEK
FIGURE 10b
INDIAN CREEK
FIGURE 10c
Moonlight
Creek
Taylorsville
Indian
Cooks
Creek
WOLF CREEK
FIGURE 10a
Indian
Creek
Crescent Mills
89
Williams
Creek
N. Canyon Cr.
Round
Valley Res.
Creek
Greenville
Wolf
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT
SCHEMATIC DIAGRAM
DIVERSIONS FROM
INDIAN CREEK
WATERMASTER SERVICE AREA

FIGURE 10a



DIVERSION NUMBER	NAME	CFS
59a	Soper Wheeler Co.	0.05
61	McMullen	0.10
62	Soper Wheeler Co.	0.28
	Hollingsworth	0.70
65	Bidwell	0.20
66	Orcutt	0.18
	Rilea	0.07
	Santoni	0.25
67	Leininger	0.70
	Duensing	0.90
	Posch	2.70
	Trustees-Indian Valley Association	0.70
		1.05
	Hatzell	0.205
	Santos	0.245
68	Frederickson	2.25
69	Sheehan	1.75
70	Guidici	3.85
73	Wheelock	1.00
74	J. Wilbur Jr.	1.40

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT

SCHEMATIC DIAGRAM
DIVERSIONS FROM
WOLF CREEK
INDIAN CREEK
WATERMASTER SERVICE AREA

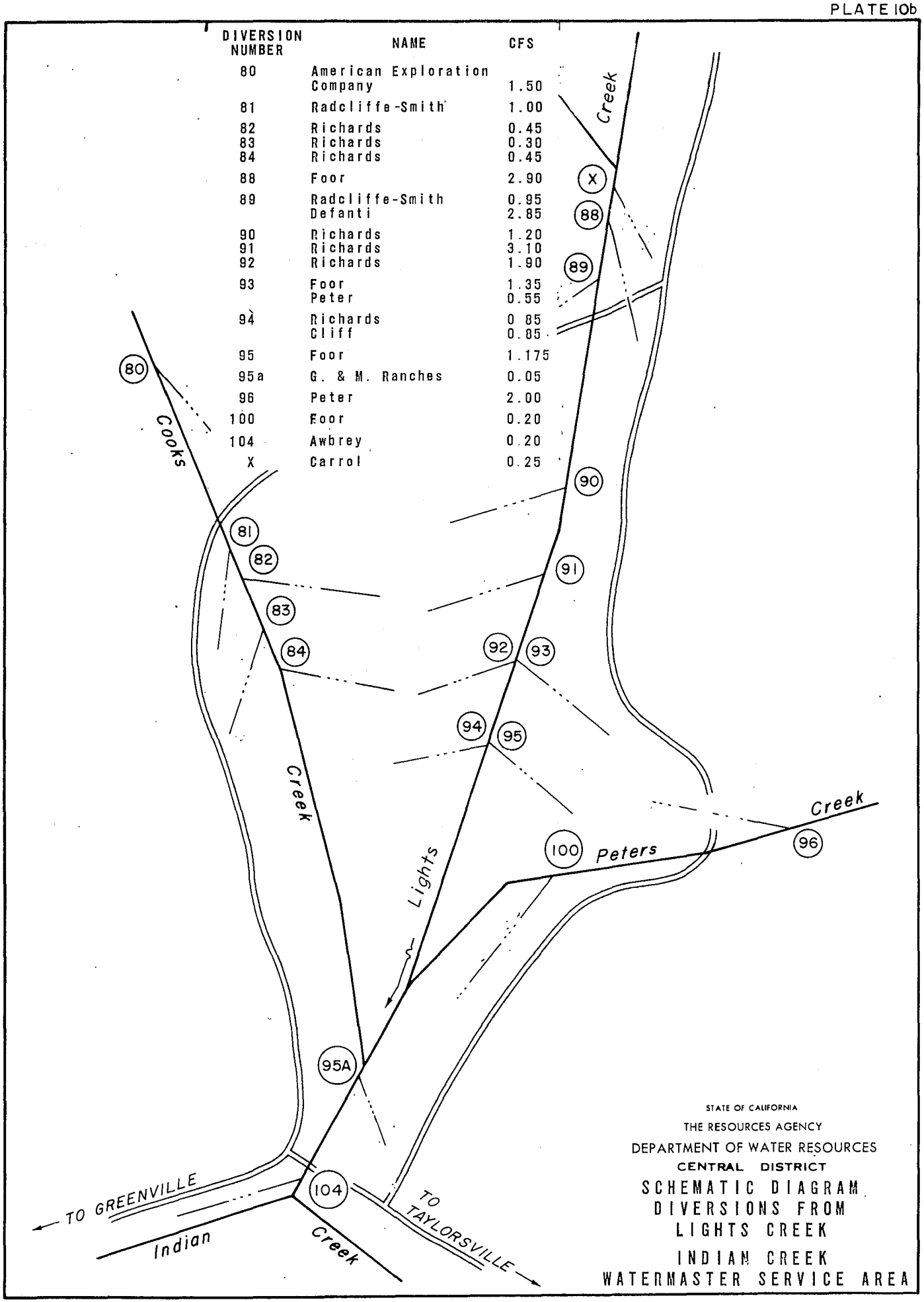
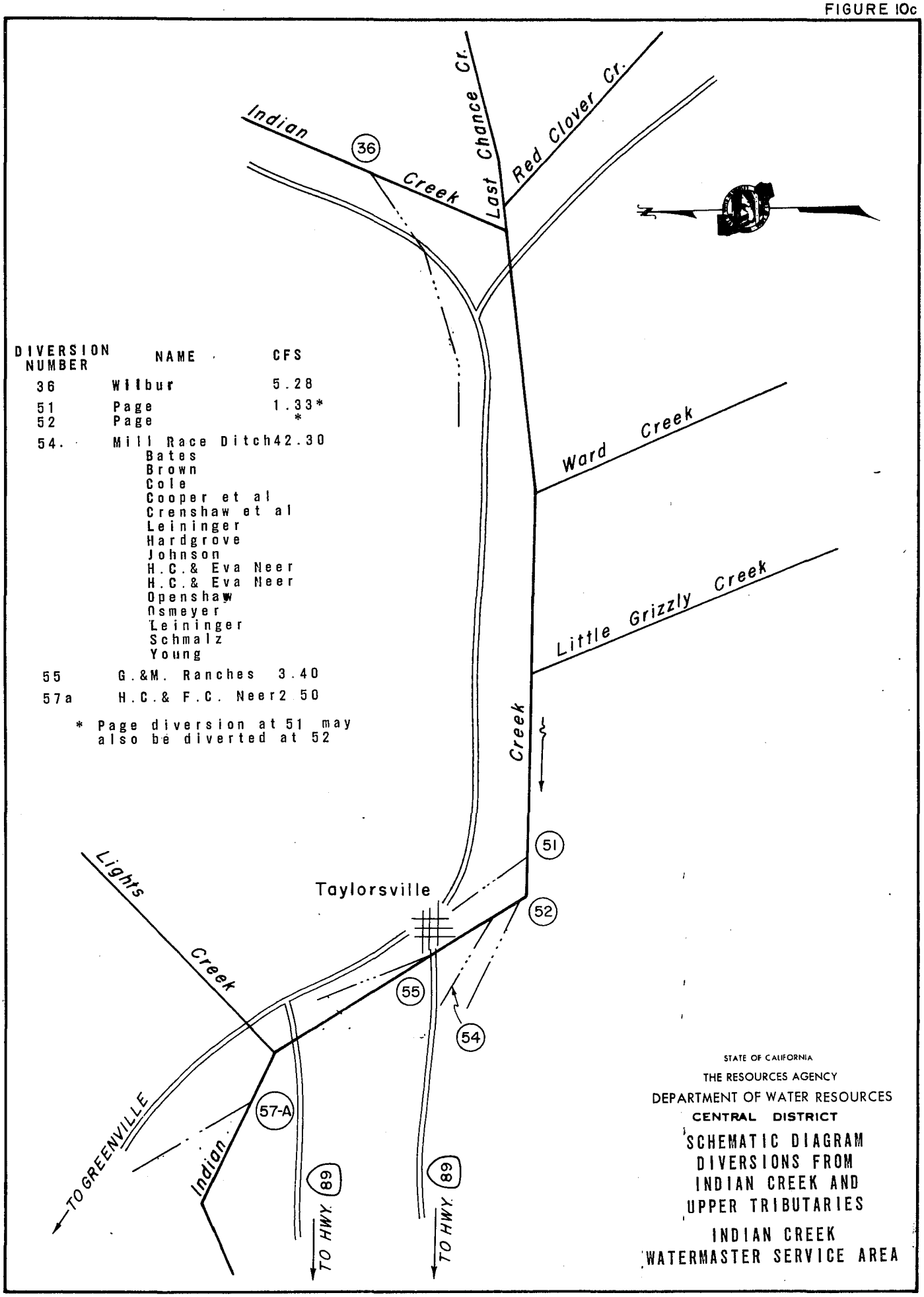

DIVERSION NUMBER
NAME
CFS
80 American Exploration Company 1.50
81 Radcliffe-Smith 1.00
82 Richards 0.45
83 Richards 0.30
84 Richards 0.45
88 Foor 2.90
89 Radcliffe-Smith 0.95
Defanti 2.85
90 Richards 1.20
91 Richards 3.10
92 Richards 1.90
93 Foor 1.35
Peter 0.55
94 Richards 0.85
Cliff 0.85
95 Foor 1.175
95a G. & M. Ranches 0.05
96 Peter 2.00
100 Foor 0.20
104 Awbrey 0.20
X Carrol 0.25
Creek
Cooks
Creek
Lights
Creek
Peters
Creek
Indian
Creek
TO GREENVILLE
TO TAYLORSVILLE
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT
SCHEMATIC DIAGRAM
DIVERSIONS FROM
LIGHTS CREEK
INDIAN CREEK
WATERMASTER SERVICE AREA

FIGURE 10c



DIVERSION NUMBER	NAME	CFS
36	Wilbur	5.28
51	Page	1.33*
52	Page	*
54.	Mill Race Ditch	42.30
	Bates	
	Brown	
	Cole	
	Cooper et al	
	Crenshaw et al	
	Leininger	
	Hardgrove	
	Johnson	
	H.C.& Eva Neer	
	H.C.& Eva Neer	
	Openshaw	
	Osmeyer	
	Leininger	
	Schmalz	
	Young	
55	G.&M. Ranches	3.40
57a	H.C.& F.C. Neer	2.50

* Page diversion at 51 may also be diverted at 52

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT

SCHEMATIC DIAGRAM
DIVERSIONS FROM
INDIAN CREEK AND
UPPER TRIBUTARIES

INDIAN CREEK
WATERMASTER SERVICE AREA

Middle Fork Feather River Watermaster Service Area

The Middle Fork Feather River service area is located in the plateau area on the west slope of the Sierra Nevada Mountains in the eastern portions of Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area is comprised of five major stream groups. These groups, starting in the northeast corner of the valley and proceeding in a southerly and westerly direction, are Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for approximately 20 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Maps of the Middle Fork Feather River service area are presented as Figures 11 through 11k, pages 64 through 76.

Basis of Service

The water rights on this stream system, which is in Plumas and Sierra Counties, were determined by a statutory adjudication and set forth in Decree No. 3095, Plumas County Superior Court, dated January 19, 1940.

The Middle Fork Feather River watermaster service area was created on March 29, 1940 and excluded certain tributaries and springs. The service area has been amended three times to include and exclude certain water rights. There are currently 98 water right owners in the service area with total allotments of 371.565 cubic feet per second.

The Middle Fork Feather River decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - eight; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Sierra Valley Water Company - one; Webber Creek and tributaries - six; and Smithneck Creek - five.

Water Supply

The major water supply in the Middle Fork Feather River service area is derived from snowmelt runoff, with minor flow from springs and from supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam which was constructed by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract. Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about June 1. Only first and second priority allotments are then available for the remainder of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time up to 60 cubic feet per second is diverted from Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber Creek via Cold Stream for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly during July, producing only a small quantity during the latter part of the season. The West Side Canal streams normally supply all allotments until the first part of June. The flow then gradually declines throughout the season.

The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. The flow then gradually declines for the remainder of the season.

Records of the daily mean discharge of several stream gaging stations in the Middle Fork Feather River service area are presented in Tables 17 and 18, page 63.

Method of Distribution

Wild flooding is employed by the majority of the water users to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1972 Distribution

Watermaster service began April 1 in the Middle Fork Feather River service area and continued until September 30. Joe Nessler, Water Resources Engineering Associate, was supervising watermaster during this period. Conrad Lahr, Water Resources Technician II, assisted as deputy watermaster.

This was a drier than average season in the service area due to below-normal snowpack resulting in less spring runoff.

Little Last Chance Creek. This was the eleventh season of operation for Frenchman Dam and Reservoir. Release and distribution of water was in accordance with the annual contract between the Department of Water Resources and the Last Chance Creek Water District. Contract releases started April 24 and ended October 31. Total delivery during the season was 14,430 acre-feet.

Smithneck Creek. The available water supply was sufficient to satisfy all allotments (five priorities) until mid-March. On April 5 a two-week rotation schedule for the users below Loyalton was started. By July 5 the flow had dropped to less than four cubic feet per second below Loyalton and the rotation was discontinued.

Webber Creek and Tributaries. The natural flow of Webber Creek was sufficient to supply all allotments (six priorities) until about May 1. It then decreased gradually until about 30 percent of second priority allotments were being served at the end of the season. Importation of water from the Little Truckee River was begun on April 4 to supplement the natural flow of Webber Creek to satisfy all allotments of the Sierra Valley Mutual Water Company shareholders (one priority). A total of 6,090 acre-feet of water was diverted through the Little Truckee Ditch up to September 24 at which time diversion was terminated. This diversion provided sufficient water until about July 1.

West Side Canal Group. The available water supply in the West Side Canal Group, consisting of Hamlin, Miller and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until mid-May at which time a rotation schedule was initiated for the water users on Turner Creek below Highway 89. The water supply continued to decrease and by August there was only sufficient supply for first and 20 percent of second priority.

Fletcher Creek and Spring Channels. The available water supply was sufficient to satisfy all allotments (three priorities) until about July 1. The flow then dropped gradually and by August there was only enough water to supply first priority users.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 17

LITTLE TRUCKEE DITCH AT HEAD

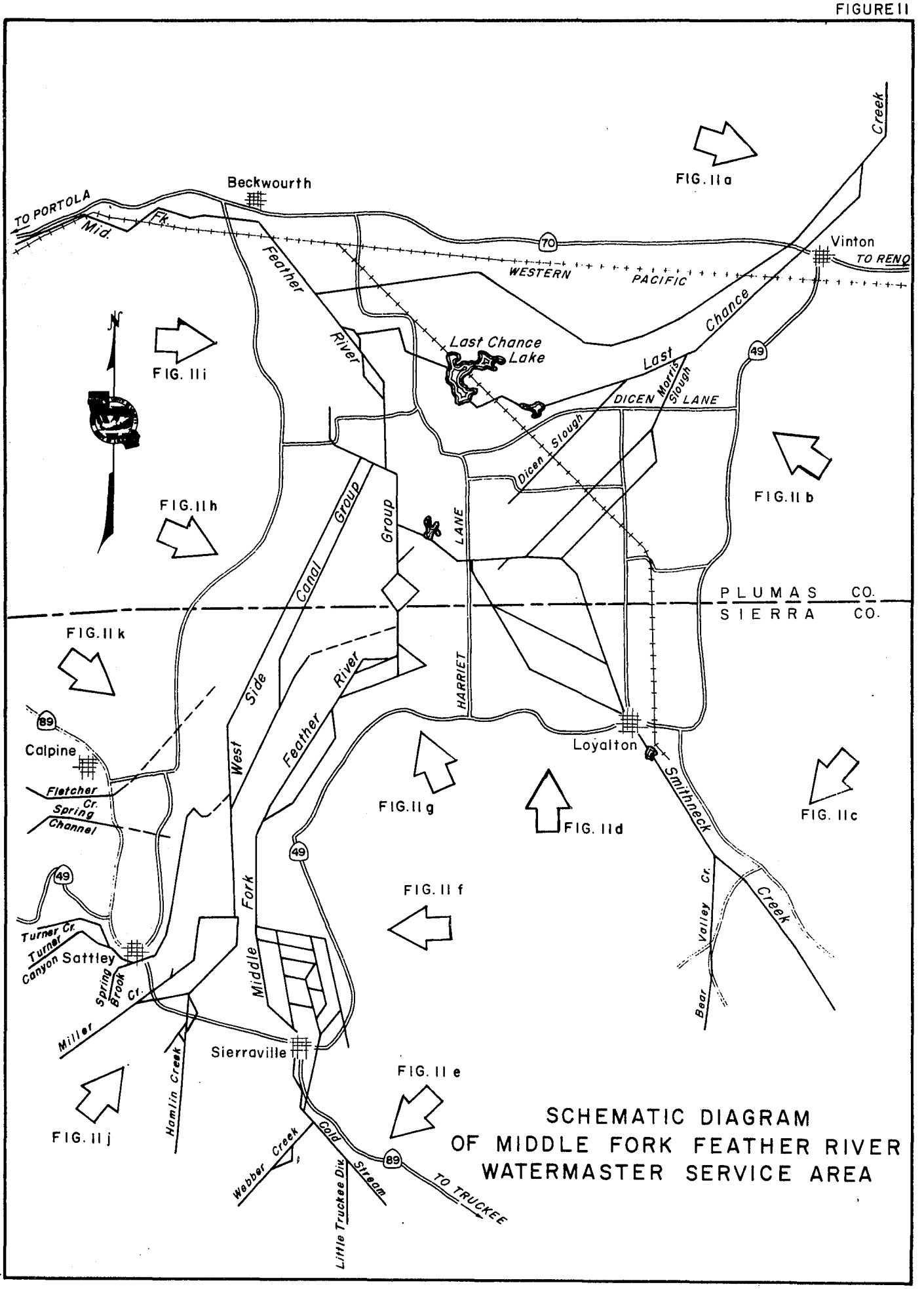
Day	March	April	May	June	July	August	September	Day
1				56	45	3.0	5.4	1
2				52	41	2.8	4.6	2
3				48	35	2.8	2.8	3
4			14*	44	31	2.6	2.6	4
5			30	44	28	2.4	3.0	5
6			30	44	25	2.3	2.8	6
7			29	44	21	2.3	2.4	7
8			27	42	19	2.3	2.4	8
9			27	41	17	2.3	2.4	9
10			27	40	15	2.1	2.4	10
11			28	31	14	2.1	2.4	11
12			29	40	14	1.9	2.4	12
13			30	55	13	1.9	2.4	13
14			32	60	13	1.9	2.4	14
15			34	60	12	1.9	2.4	15
16			34	60	11	1.9	2.4	16
17			32	60	9.5	2.1	2.3	17
18			35	60	9.2	2.1	2.3	18
19			40	60	8.2	1.9	2.3	19
20			35	59	7.9	1.7	2.3	20
21			31	58	7.9	1.6	2.3	21
22			13	56	7.6	1.7	2.3	22
23			21	53	6.5	1.6	2.1	23
24			37	50	5.9	1.4	2.1	24
25			41	47	5.1	1.4	2.1	25
26			45	52	5.1	1.3	1.6**	26
27			49	58	4.6	1.3		27
28			53	58	4.1	1.3		28
29			53	56	3.6	1.6		29
30			53	52	3.6	2.1		30
31			56		3.6	3.4		31
Mean			34.5	51.3	14.4	2.0	2.6	Mean
Runoff In Acre-Feet			1914	3055	885	125	133	Runoff In Acre-Feet

* Beginning of Flow
** End of Floww

TABLE 18

MIDDLE FORK FEATHER RIVER AT PORTOLA

Day	March	April	May	June	July	August	September	Day
1	934	129	81	69	24	13	10	1
2	830	119	85	61	23	13	11	2
3	645	111	78	56	23	12	11	3
4	548	104	67	54	18	13	11	4
5	518	119	60	58	8.1	12	12	5
6	537	167	53	62	8.8	12	12	6
7	552	243	51	67	7.7	12	13	7
8	511	305	55	72	6.2	12	13	8
9	480	305	63	73	5.0	11	13	9
10	499	250	66	71	12	11	14	10
11	558	232	64	67	17	11	14	11
12	576	267	58	65	16	11	15	12
13	536	318	55	60	15	11	15	13
14	453	356	52	57	14	11	15	14
15	391	366	54	64	11	11	14	15
16	317	344	53	66	10	11	16	16
17	254	313	51	57	11	11	17	17
18	237	274	52	52	9.9	11	17	18
19	222	219	93	48	10	11	17	19
20	213	168	143	44	11	11	17	20
21	201	151	160	41	10	10	18	21
22	189	133	168	44	9.2	10	17	22
23	190	111	157	55	8.7	9.9	18	23
24	188	94	173	41	9.6	8.1	19	24
25	188	77	166	43	9.0	8.1	19	25
26	191	31	143	49	8.8	8.1	24	26
27	201	11	122	35	9.3	8.6	24	27
28	193	28	107	28	9.6	9.4	22	28
29	173	62	95	27	13	13	23	29
30	158	78	87	27	13	12	26	30
31	146		79		12	10		31
Mean	381	182	90.0	53.8	12.0	10.9	16.2	Mean
Runoff In Acre-Feet	23462	10879	5536	3199	740	671	966	Runoff In Acre-Feet



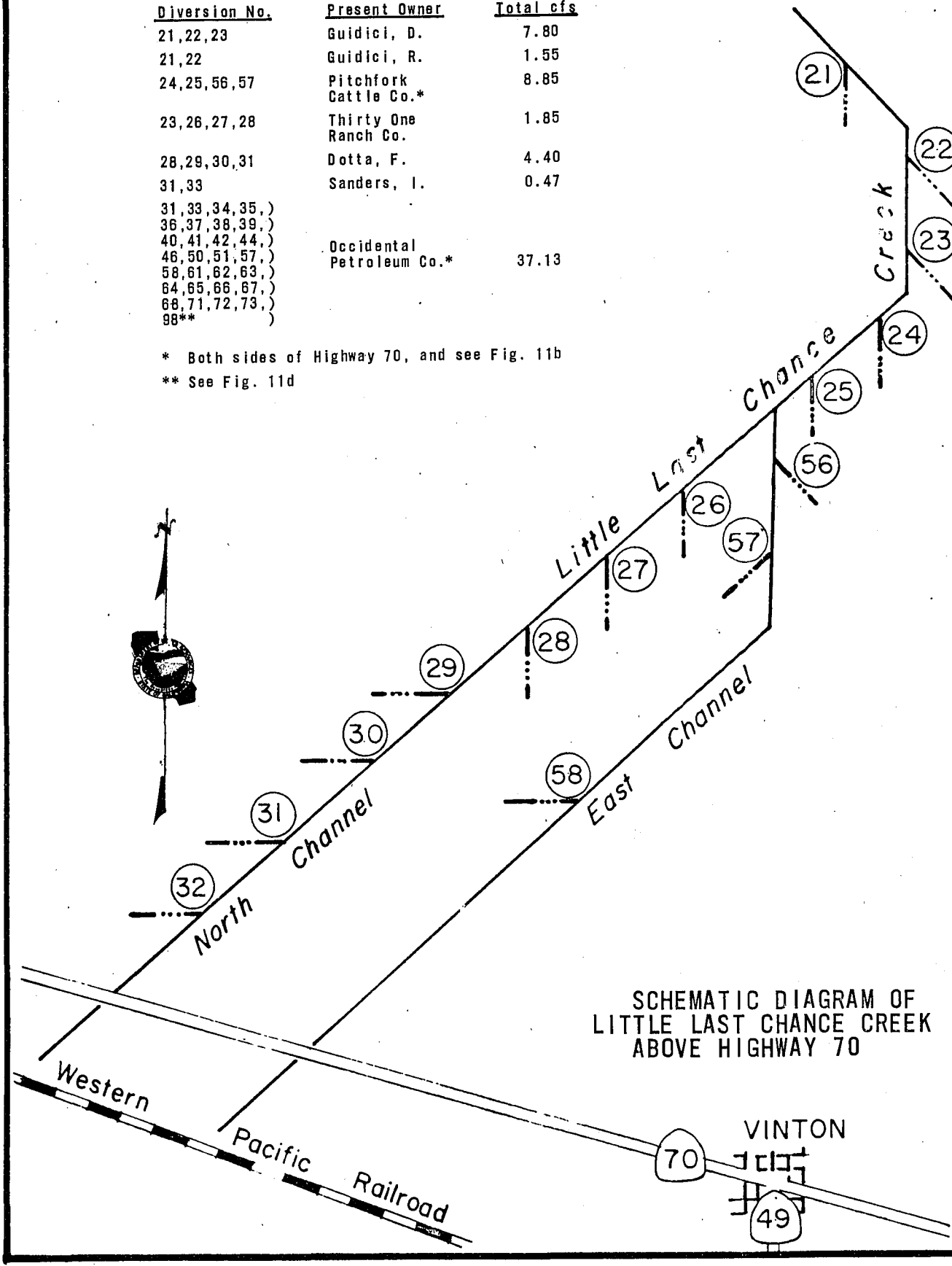
SCHEMATIC DIAGRAM
OF MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

ALLOCATIONS FROM LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

Diversion No.	Present Owner	Total cfs
21,22,23	Guidici, D.	7.80
21,22	Guidici, R.	1.55
24,25,56,57	Pitchfork Cattle Co.*	8.85
23,26,27,28	Thirty One Ranch Co.	1.85
28,29,30,31	Dotta, F.	4.40
31,33	Sanders, I.	0.47
31,33,34,35,) 36,37,38,39,) 40,41,42,44,) 46,50,51,57,) 58,61,62,63,) 64,65,66,67,) 68,71,72,73,) 98**)	Occidental Petroleum Co.*	37.13

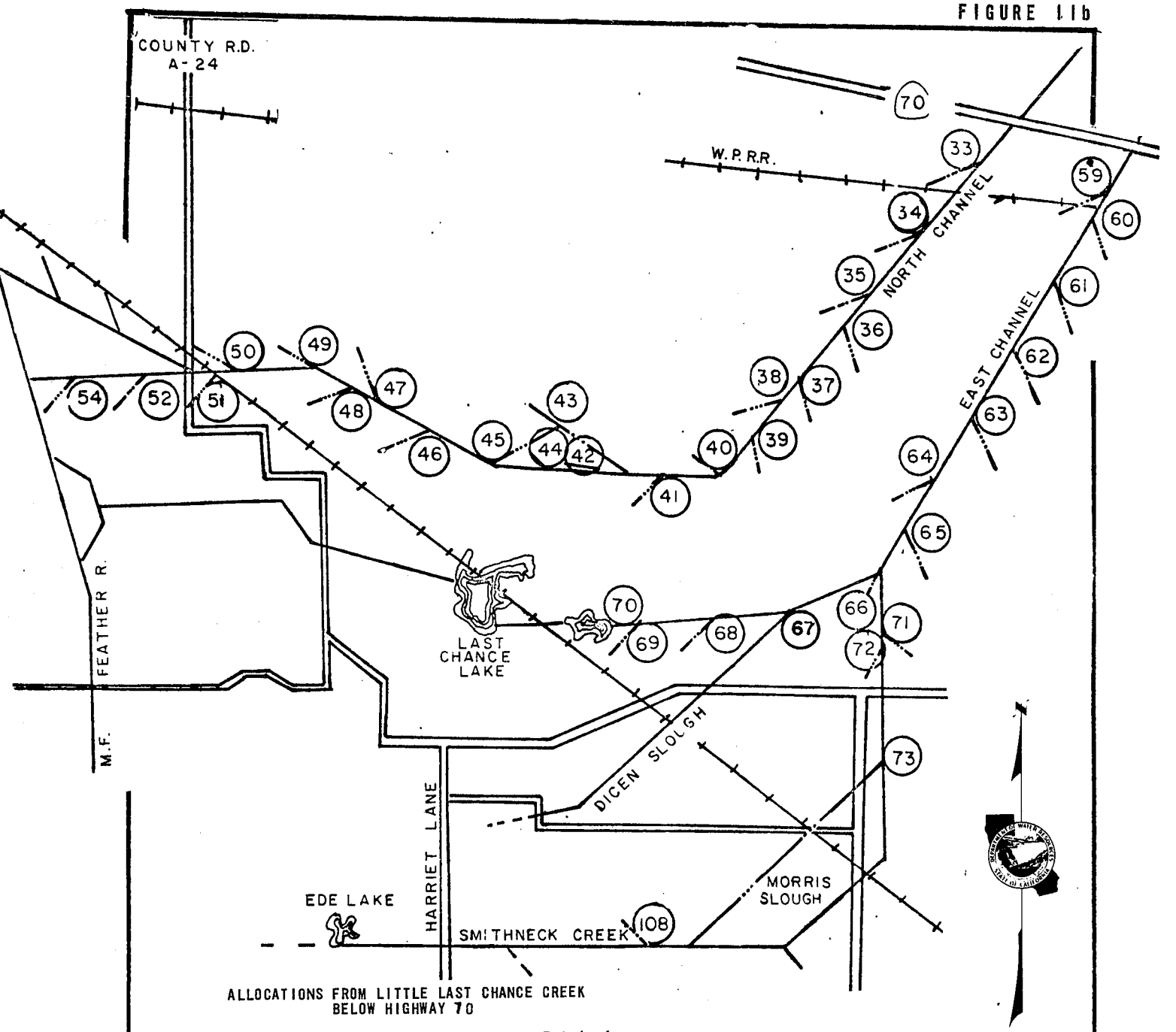
* Both sides of Highway 70, and see Fig. 11b

** See Fig. 11d



SCHEMATIC DIAGRAM OF
LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

FIGURE 11b



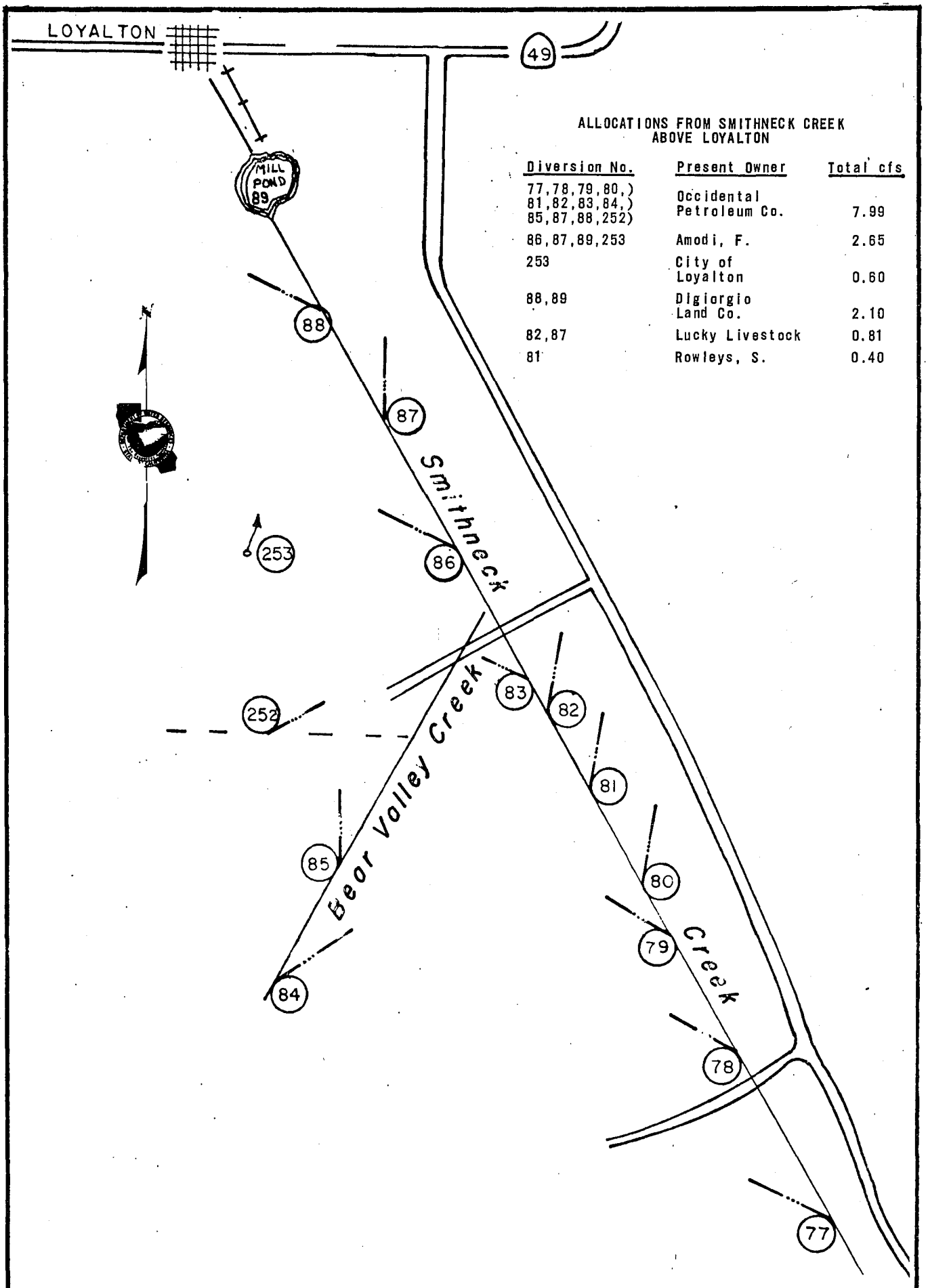
ALLOCATIONS FROM LITTLE LAST CHANCE CREEK BELOW HIGHWAY 70

Diversion No.	Present Owner	Total cfs
31*,32*,57*,) 58*,59,60)	Ramelli, T.	3.30
57,58,59,60	Ayoob, G.	4.05
43,44,45,67, 68,69,72,79	Roberti, E.	9.14
70	Rammelli, M.	0.55
70	Wiley, J.	0.20
70	Carmicheal, F.	0.10
47,48,49	Bonta, S.	4.45
52,53	Maddalena, L.	1.20
54,55	Noble, P.	0.45
67,72	Humphrey, M.	1.68
67,108	Hage, J.	0.20

* See Fig. 11a for location of diversions 33-42, 46, 50, 51, 61-68, 71, 72, 73, 98 (Occidental Petroleum)

SCHEMATIC DIAGRAM OF LITTLE LAST CHANCE CREEK BELOW HIGHWAY 70

FIGURE IIc

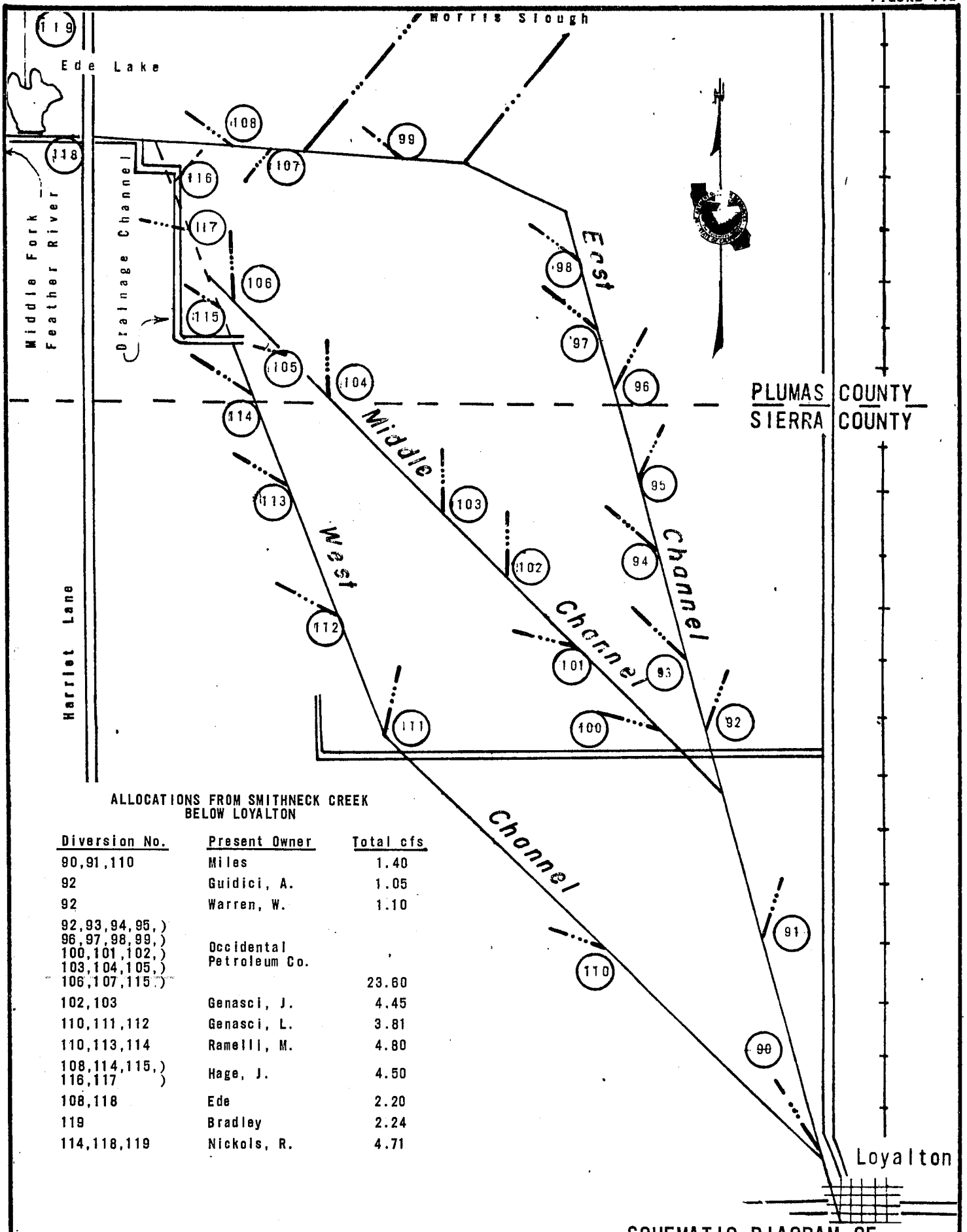


ALLOCATIONS FROM SMITHNECK CREEK ABOVE LOYALTON

Diversion No.	Present Owner	Total cfs
77,78,79,80,) 81,82,83,84,) 85,87,88,252)	Occidental Petroleum Co.	7.99
86,87,89,253	Amodi, F.	2.65
253	City of Loyalton	0.60
88,89	Digiorgio Land Co.	2.10
82,87	Lucky Livestock	0.81
81	Rowleys, S.	0.40

SCHEMATIC DIAGRAM OF SMITHNECK CREEK ABOVE LOYALTON

FIGURE IId



ALLOCATIONS FROM SMITHNECK CREEK BELOW LOYALTON

Diversion No.	Present Owner	Total cfs
90,91,110	Miles	1.40
92	Guidici, A.	1.05
92	Warren, W.	1.10
92,93,94,95,) 96,97,98,99,) 100,101,102,) 103,104,105,) 106,107,115)	Occidental Petroleum Co.	23.60
102,103	Genasci, J.	4.45
110,111,112	Genasci, L.	3.81
110,113,114	Ramelli, M.	4.80
108,114,115,) 116,117)	Hage, J.	4.50
108,118	Ede	2.20
119	Bradley	2.24
114,118,119	Nickols, R.	4.71

SCHEMATIC DIAGRAM OF SMITHNECK CREEK BELOW LOYALTON

FIGURE II.e

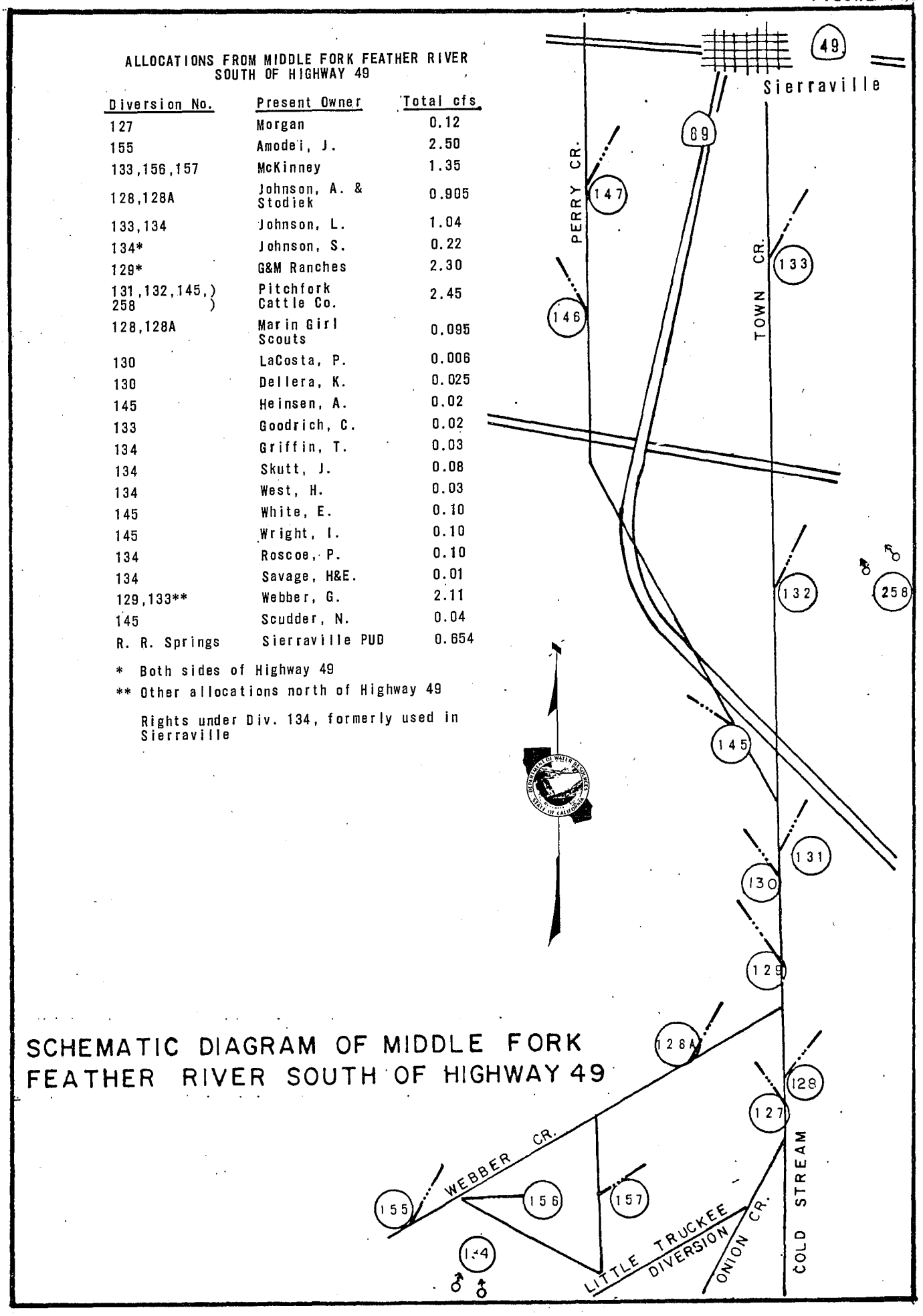
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
SOUTH OF HIGHWAY 49

Diversion No.	Present Owner	Total cfs
127	Morgan	0.12
155	Amodei, J.	2.50
133,156,157	McKinney	1.35
128,128A	Johnson, A. & Stodiek	0.905
133,134	Johnson, L.	1.04
134*	Johnson, S.	0.22
129*	G&M Ranches	2.30
131,132,145,) 258)	Pitchfork Cattle Co.	2.45
128,128A	Marin Girl Scouts	0.095
130	LaCosta, P.	0.006
130	Dellera, K.	0.025
145	Heinsen, A.	0.02
133	Goodrich, C.	0.02
134	Griffin, T.	0.03
134	Skutt, J.	0.08
134	West, H.	0.03
145	White, E.	0.10
145	Wright, I.	0.10
134	Roscoe, P.	0.10
134	Savage, H&E.	0.01
129,133**	Webber, G.	2.11
145	Scudder, N.	0.04
R. R. Springs	Sierraville PUD	0.654

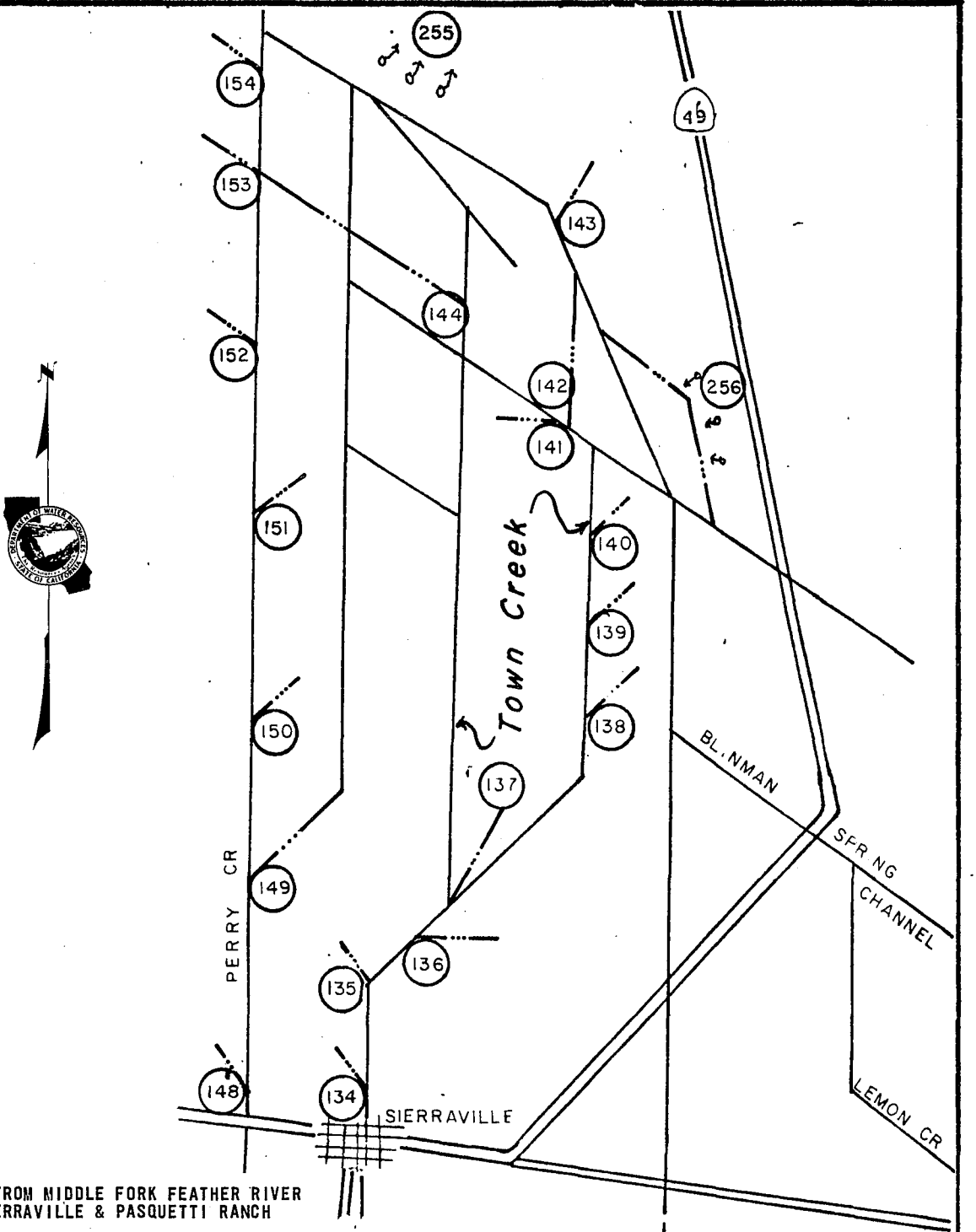
* Both sides of Highway 49

** Other allocations north of Highway 49

Rights under Div. 134, formerly used in Sierraville



SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER SOUTH OF HIGHWAY 49



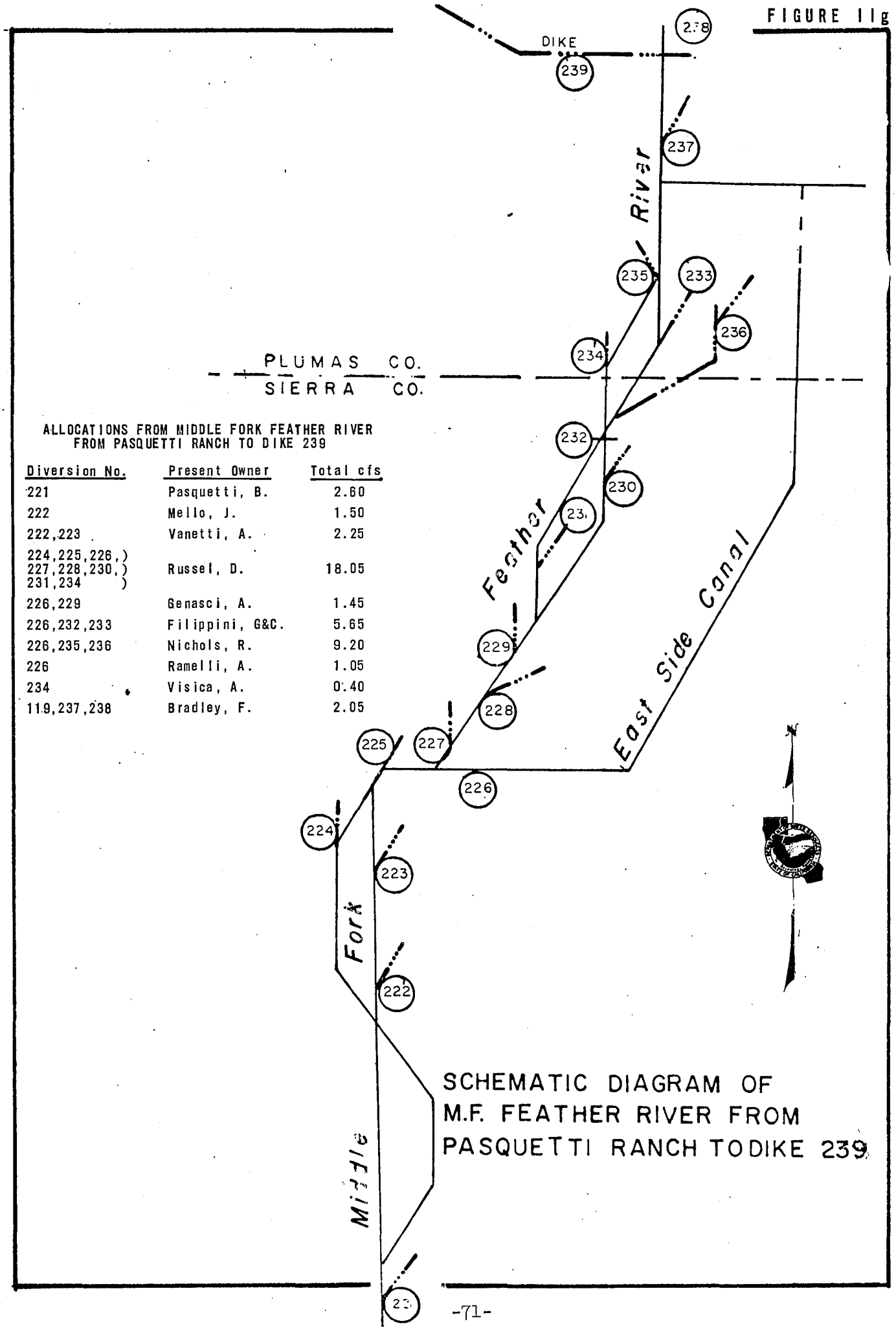
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER BETWEEN SIERRAVILLE & PASQUETTI RANCH

Diversion No.	Present Owner	Total cfs
134	Hannon, P.	0.015
134	Snozzi, A.	0.02
135	Carmichael, F.	0.55
137,141,146*,) 147*,149,152)	Webber, G.	13.00
136,137,138,) 139,147*)	Bony, M.	6.85
148	Wilson Bros.	2.00
148,149,150,) 151)	Small, F.	4.90
140,256	Alpers, F.	3.20
142,143,255	Torri, K.	4.00
144,153,154	Mooney, J.	2.00

* See Fig. 11e

SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER BETWEEN SIERRAVILLE AND PASQUETTI RANCH

FIGURE 11g

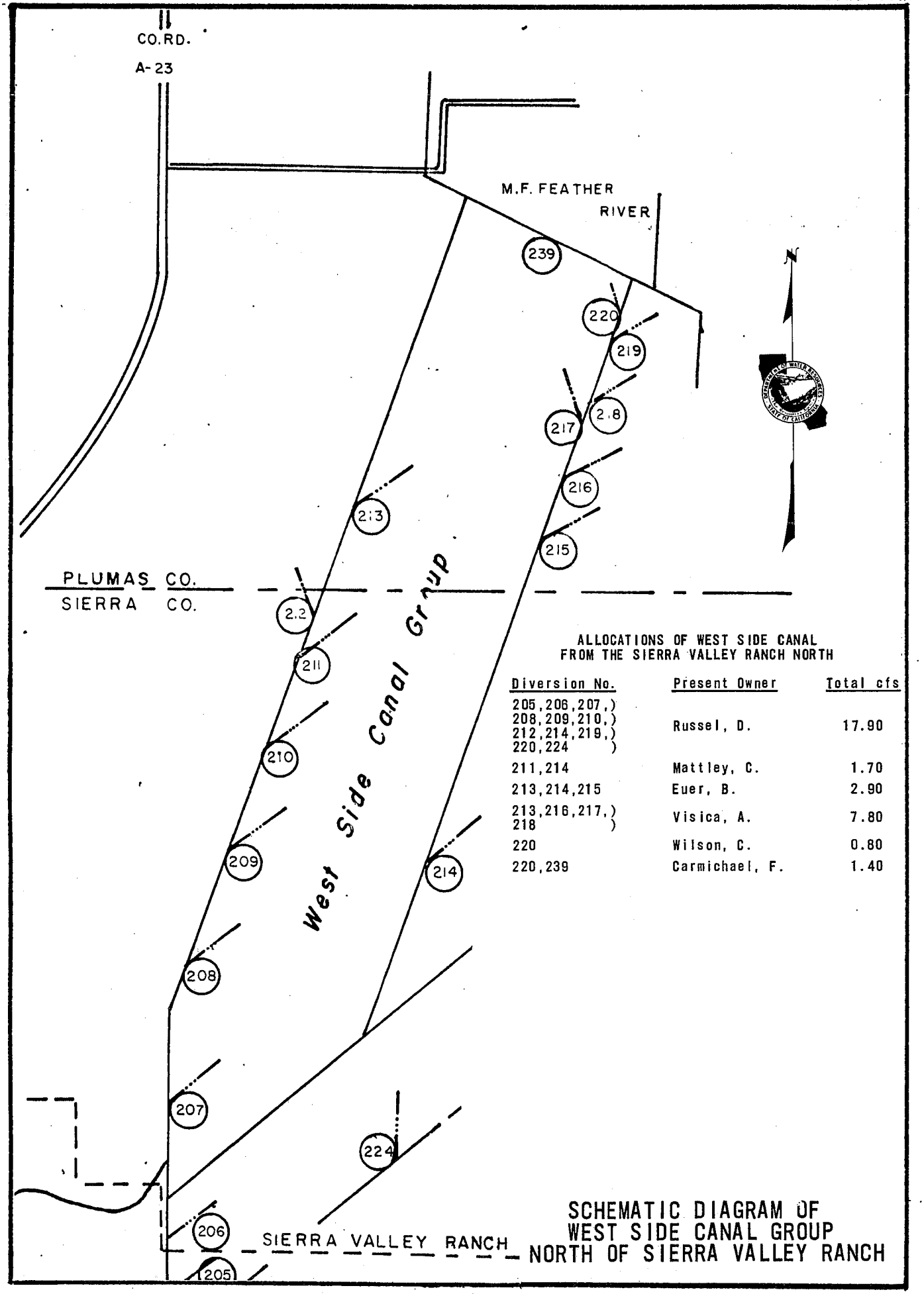


ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
FROM PASQUETTI RANCH TO DIKE 239

Diversion No.	Present Owner	Total cfs
221	Pasquetti, B.	2.60
222	Mello, J.	1.50
222,223	Vanetti, A.	2.25
224,225,226,) 227,228,230,) 231,234)	Russel, D.	18.05
226,229	Genasci, A.	1.45
226,232,233	Filippini, G&C.	5.65
226,235,236	Nichols, R.	9.20
226	Ramelli, A.	1.05
234	Visica, A.	0.40
119,237,238	Bradley, F.	2.05

SCHEMATIC DIAGRAM OF
M.F. FEATHER RIVER FROM
PASQUETTI RANCH TO DIKE 239

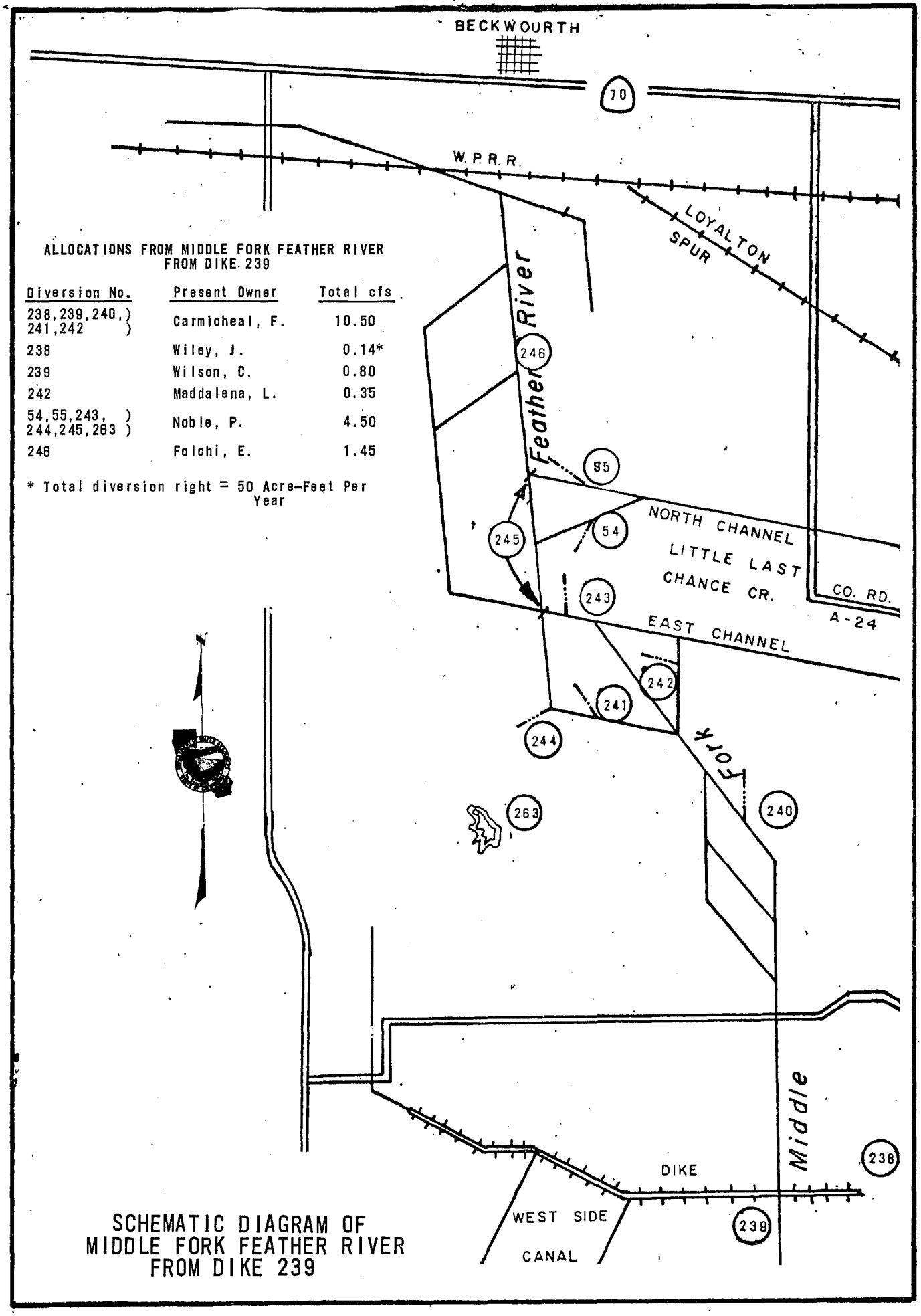
FIGURE 11h



ALLOCATIONS OF WEST SIDE CANAL
FROM THE SIERRA VALLEY RANCH NORTH

Diversion No.	Present Owner	Total cfs
205,206,207,) 208,209,210,) 212,214,219,) 220,224)	Russel, D.	17.90
211,214	Mattley, C.	1.70
213,214,215	Euer, B.	2.90
213,216,217,) 218)	Visica, A.	7.80
220	Wilson, C.	0.80
220,239	Carmichael, F.	1.40

SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP
NORTH OF SIERRA VALLEY RANCH



ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER FROM DIKE 239

Diversion No.	Present Owner	Total cfs
238,239,240,) 241,242)	Carmicheal, F.	10.50
238	Wiley, J.	0.14*
239	Wilson, C.	0.80
242	Maddalena, L.	0.35
54,55,243,) 244,245,263)	Noble, P.	4.50
246	Folchi, E.	1.45

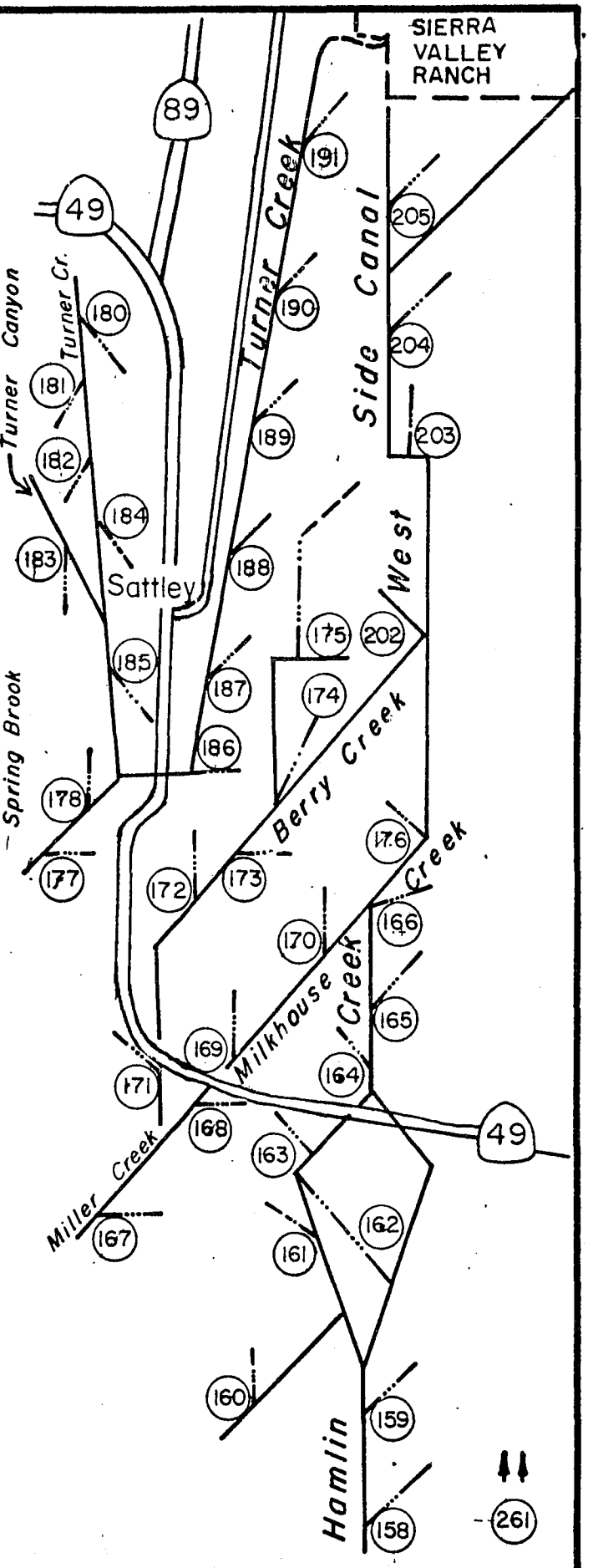
* Total diversion right = 50 Acre-Feet Per Year

SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER FROM DIKE 239

FIGURE 11j

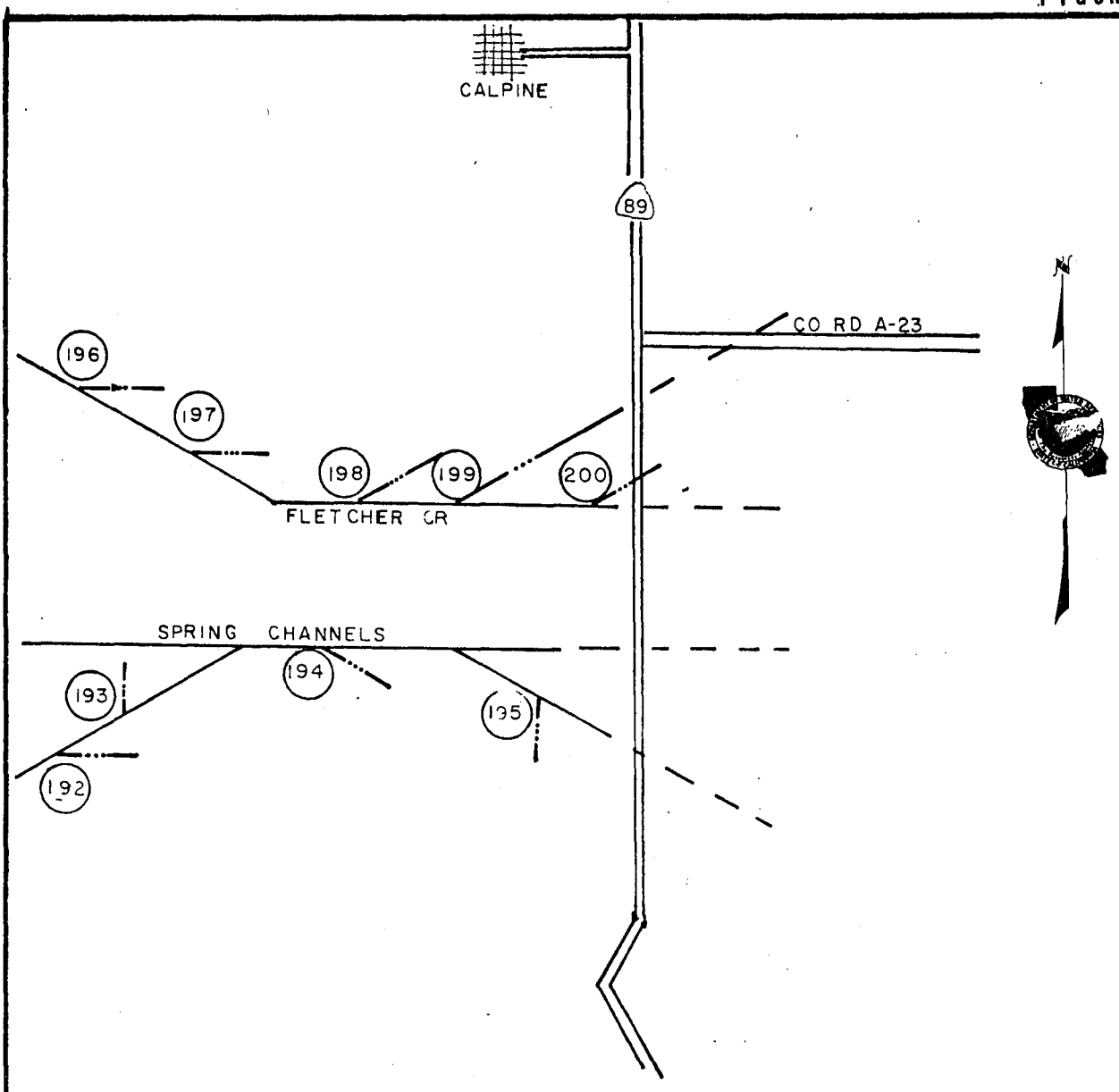
ALLOCATIONS FROM WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH

Diversion No.	Present Owner	Total cfs
158,159,161,) 162,261)	Maddalena, L.	6.13
167	Strang, A&E.	0.01
160,161,163,) 164,167)	Strang, Estate of	8.54
165,167,168,) 169,170,171,) 173,174,177)	Martinetti, E.	6.33
165,166	Webber, G.	2.60
172,177,178,) 184,185)	Cavitt, J.	4.25
174,202	Openshaw, G.	2.10
175,184,186,) 187)	Church, G.	5.60
180	Turner, J.	0.02
175,181,182,) 183,184,185,) 187,189,190,) 202)	Turner, F.	10.25
176	Wilson Bros.	1.50
180,188	Dargie, T.	2.90
189	Berutti, J.	2.50
189,191,202,) 204,205	Van Vleck, G.	6.05
176,203	Mooney, J.	1.50
176	Pasguetti, B.	2.40



SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH

FIGURE 11k



ALLOCATIONS FROM FLETCHER CREEK
AND SPRING CHANNELS

Diversion No.	Present Owner	Total cfs
196	Sierra Co. Water District	0.52
196	Blanchard, O.	0.04
177,178,192,) 193,194)	Borelli, A.	1.744
192	Scott, F.	0.05
192,193,194	Jinnette, F&W.	0.046
195,199,200	Paulson & Cadenhead	1.428
199	Lukens & Coppla	0.302
199,200	All Pro Guest Ranch	0.864
199,200	Berutti, J.	0.456

SCHEMATIC DIAGRAM
FLETCHER CREEK
AND
SPRING CANAL

North Fork Cottonwood Creek Service Area

The North Fork Cottonwood Creek service area is situated in Shasta County near the town of Ono west of Redding. Figure 12, page 79, shows the North Fork Cottonwood Creek stream system including the diversions and roads.

The source of water supply for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. The North Fork of Cottonwood Creek flows through the service area in a southwesterly direction to its confluence with the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels separated by steep, brushy hills. These lands are at about the 1,000-foot elevation.

Basis of Service

The water rights on this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929; however, service was provided intermittently in accordance with the decree since 1924. There are 13 water right owners in the area with total allotments of 30.30 cubic feet per second, all with equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season. However, perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands. In dry years, however, the available supply may be as low as 30 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 19. This stream gaging station is downstream from most diversion points on the creek, but gives a general indication of the water supply.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user, however, pumps directly from the creek using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was considerably higher in elevation than the creek channel.

1972 Distribution

John M. Miller, Water Resources Technician II, was watermaster in the North Fork Cottonwood Creek service area beginning June 1, 1972, and continuing until September 30.

The available water supply was below average for the 1972 irrigation season. The stream gaging station at the Gas Point Road bridge recorded a total of 10,140 acre-feet between April 1 and September 30.

Special Occurrences

Rainbow Lake, behind Musselbeck Dam, started the irrigation season at gage height 40 feet, far below its storage capacity, due to safety standards of the Division of Safety of Dams. Curtailment of storage will be in effect until extensive repairs are made to the dam.

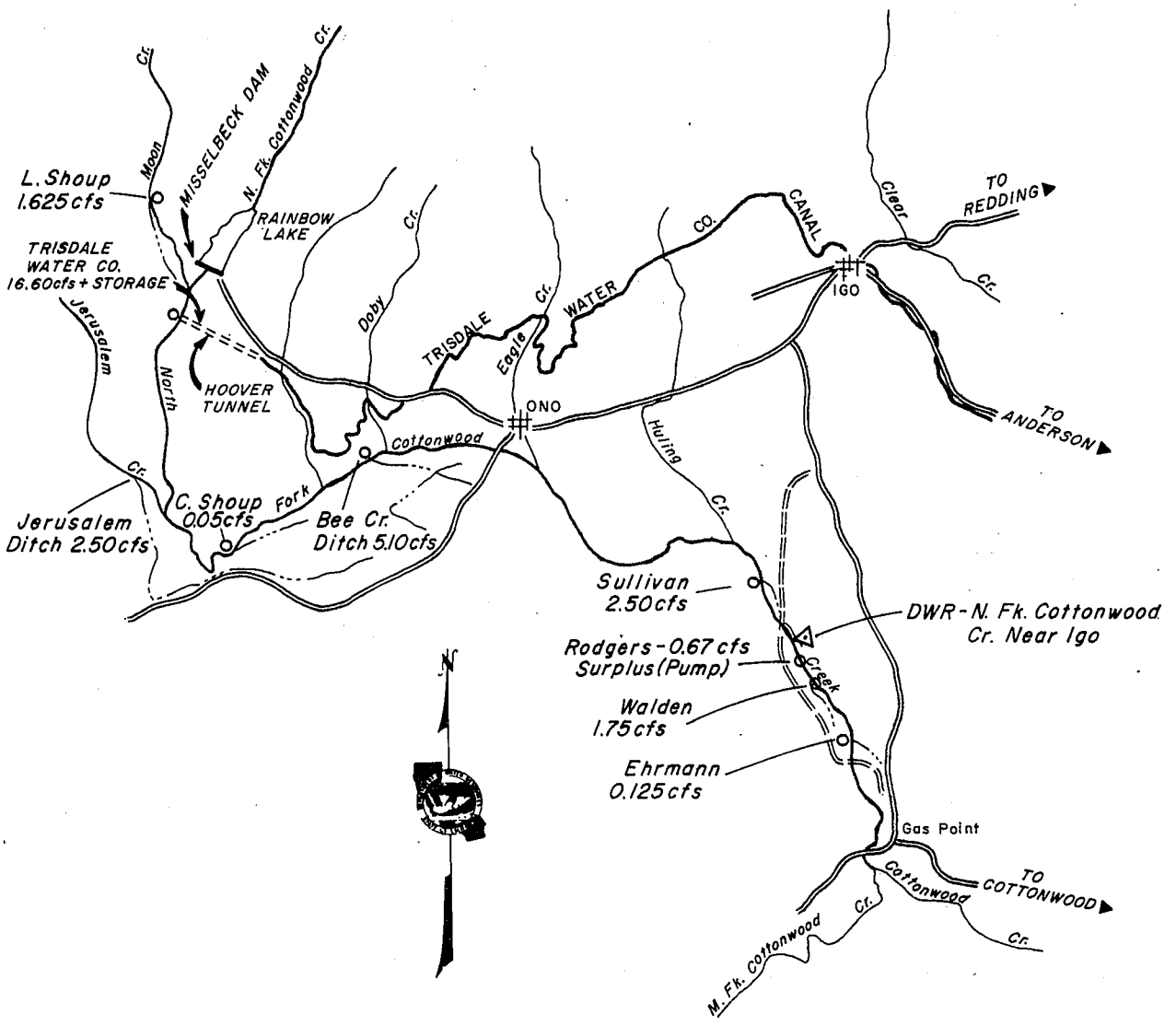
NORTH FORK COTTOMWOOD CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 18

NORTH FORK COTTONWOOD CREEK NEAR IGO

Day	March	April	May	June	July	August	September	Day
1	207	81	63	22	5.6	2.2	0.8	1
2	402	83	59	22	4.9	2.3	0.9	2
3	513	75	57	22	4.5	2.2	1.0	3
4	338	74	55	21	4.3	2.0	1.1	4
5	274	86	55	20	4.1	1.9	1.2	5
6	208	120	55	11	4.0	1.8	1.2	6
7	164	110	58	10	3.7	1.8	1.2	7
8	150	108	58	23	3.6	1.8	1.2	8
9	147	104	54	31	3.6	1.7	1.2	9
10	170	99	48	30	3.3	1.5	1.4	10
11	174	158	43	23	3.3	1.5	1.4	11
12	161	166	40	18	3.0	1.5	1.5	12
13	150	148	40	13	2.9	1.4	1.5	13
14	136	140	38	11	2.8	1.2	1.4	14
15	122	136	35	9.8	2.4	1.3	1.3	15
16	117	128	33	8.7	2.1	1.5	1.3	16
17	112	122	36	7.4	2.0	1.8	1.2	17
18	105	117	34	7.3	2.0	1.7	1.2	18
19	98	116	33	7.0	2.1	1.7	1.2	19
20	88	104	92	6.4	2.3	1.9	1.2	20
21	81	94	77	5.9	2.7	2.2	1.2	21
22	293	89	52	6.1	2.9	1.9	1.2	22
23	127	91	49	6.4	2.6	1.5	0.9	23
24	146	87	45	10	2.8	1.3	1.0	24
25	141	80	44	9.7	2.7	1.4	1.2	25
26	114	79	40	9.3	2.5	1.2	4.8	26
27	109	71	38	7.9	2.2	0.8	12	27
28	102	67	35	7.0	2.2	0.8	5.4	28
29	94	65	33	6.1	2.3	0.8	3.0	29
30	87	64	30	5.7	2.3	0.9	2.3	30
31	81		23		2.2	0.9		31
Mean	168	102	46.8	13.3	3.0	1.6	1.9	Mean
Runoff In Acre-Feet	10340	6073	2880	789	186	96	114	Runoff In Acre-Feet



△ Permanent Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

North Fork Pit River Watermaster Service Area

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends from the Oregon border about 45 miles southward to a point just south of Alturas.

A series of eight small independent streams draining the west slope of the Warner Mountains and generally following a westerly direction comprise the major source of water supply. Three of these streams, New Pine, Cottonwood, and Davis Creeks, are tributary to Goose Lake. All other streams in the service area are tributary to the North Fork Pit River. These are: Linville, Franklin, Joseph, Thoms, and Parker Creeks.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake to its confluence with the South Fork Pit River immediately below Alturas. The basins of Goose Lake and the North Fork Pit River may be considered as completely separate, since the lake has not spilled into the river for nearly 100 years.

The place of use in the northern half of the area lies in a relatively long, narrow, sloping strip extending between the eastern shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper limits on some of the creeks.

Maps of the North Fork Pit River watermaster service area and of the separate stream systems within the area are presented as Figures 13 through 13j, pages 91 through 101.

Basis of Service

There are 91 water right owners in the service area with allotments totaling 214.55 cubic feet per second. Table 20, page 84 briefly outlines the five decrees covering the area and presents data relative to establishment of watermaster service and water rights.

Water Supply

The water supply is derived primarily from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small drainage area, is almost entirely spring fed. After mid-June, the rest of the streams also depend on springs to maintain their flow, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially as regulatory storage.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches which convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches with supplemental ground water being added as the surface flow diminishes. Subirrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1972 Distribution

Watermaster service began April 20 in the North Fork Pit River service area and continued until September 30. Charles H. Holmes, Assistant Engineer, Water Resources, was watermaster during this period.

The available water supply during the spring months was excellent throughout the service area. Because of a very warm summer, however, streamflows during the latter part of the season were near average conditions.

New Pine Creek. Surplus water was available to New Pine Creek water right owners throughout the period that the proration or correlative system of distribution was in effect (until June 27). Commencing July 1, in accordance with provisions of the decree, distribution was based on the priority system (four priorities). Fourth priority allotments were satisfied until August 4. Thereafter, the flow gradually decreased until approximately 25 percent of third priority allotments were being met at the end of the season.

Cottonwood Creek. A sufficient water supply existed in Cottonwood Creek to satisfy all allotments (six priorities) until late spring. The fourth priority allotments were served until June 7. Thereafter, the flow decreased gradually, reaching first priority level on June 15. By the end of the season the flow had decreased until only about 11 percent of first priority allotments were served.

Davis Creek. The available water supply in Davis Creek was sufficient to satisfy all allotments (four priorities) until June 13. One hundred percent of third priority allotments were served until June 22. One hundred percent of second priority allotments were available throughout the remainder of the season. At the end of the season the flow was about 2 percent of third priority allotments.

Linville Creek. The available water supply in Linville Creek decreased steadily from the time watermaster service began until the end of the irrigation season. The available supply for first priority allotments ranged from 86 percent on May 17 to 52 percent at the end of the season.

Franklin Creek. The available water supply in Franklin Creek was sufficient to satisfy all allotments (four priorities) from April 28 until June 5. One hundred percent of the third priorities were served until June 9. The flow then gradually decreased until mid-September when 19 percent of third priority allotments were being served. On September 15 the winter schedule of priorities became effective. Under this schedule, only 15 percent of third priority allotments were met.

Joseph Creek. A surplus water supply existed in Joseph Creek until June 16. The flow then receded until on August 29 only first priority allotments (four priorities) were served. Thereafter, the flow gradually decreased to 85 percent of first priority allotments at the end of the season.

Thoms Creek. A sufficient water supply existed in Thoms Creek to meet all allotments (three priorities) until July 12. The flow then gradually decreased to 6 percent of third priority allotments at the end of the season.

Gleason Creek. The available water supply in Gleason Creek was sufficient to satisfy fourth priority allotments (five priorities) until April 25. The flow then rapidly dropped to 100 percent of third priority allotments by May 23. By June 15 the creek was dry.

Shields Creek. A surplus water supply existed in Shields Creek until mid-June. The flow decreased rapidly until approximately 75 percent of second priority allotments (four priorities) were served on July 31. The supply then gradually decreased until the end of September when 30 percent of second priority allotments were being supplied.

Parker Creek. The flow in Parker Creek peaked in mid-May and continued to serve 100 percent of all allotments (four priorities) until mid-June. From then until late September the flow continued to decrease gradually. At that time about 20

percent of third priority allotments were served.

North Fork Pit River. A surplus water supply existed in the North Fork Pit River until June 13. On that date the Dorris Reservoir allotments were reduced. The flow then decreased rapidly until July 6 when only first priority allotments (five priorities) were being served. The decrease continued until July 20 when only 53 percent of first priority allotments were available. This condition continued throughout the remainder of the season.

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER SERVICE AREA

Stream	Modoc County Superior Court Decree No.	Date	Type[a/]	Service Area Created	No. of Water Right Owners	Total Cubic Feet Per Second	Remarks
New Pine Creek	2821	6-14-32	CR	6-22-32	21	22.18	Decree does not define town users rights, but by agreement they may divert from 7 a.m. Monday until 7 a.m. Tuesday, further modified to a continuous flow used in rotation.
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis Creek	2782	6-30-32	CR	7-13-32	19	52.70	4 priorities, 4-1 to 9-15. Some rights vary according to flow available. Most 1st & 2nd priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2[b/]		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin Creek	3118	9-08-33	CR	9-14-33	4	11.66	4 priorities. The 1st priority and all 2nd priority rights are year-round, except one, which is equal to all the others (1.46 cfs), and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-34	S	12-18-39	10	51.73	5 priorities, 4-1 to 9-30. Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. 4th and 5th priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	2 priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	4 priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	7	18.07	4 priorities, 4-1 to 9-30, Diversion to Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek ditch.
Shielfs	4074	12-14-39	S	12-18-39	5	7.50	4 priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44 9.40	3 priorities, 4-1 to 9-30. (5.0 cfs export to Cedar Cr. ((4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.45	5 priorities.

a/ S-Statutory, CR-Court Reference,

b/ Appropriative rights, junior to the decreed rights.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 21

NEW PINE CREEK BELOW SCHROEDER'S

Day	March	April	May	June	July	August	September	Day
1			23	44	19	14	8.8	1
2			27	43	19	13	8.8	2
3			31	42	18	13	8.6	3
4			33	42	17	13	8.6	4
5			35	42	17	12	8.8	5
6			36	44	17	12	8.6	6
7			40	46	17	11	8.6	7
8			38	46	16	11	8.6	8
9			37	45	16	10	8.6	9
10			36	43	16	9.8	8.8	10
11		20*	33	39	16	9.8	8.8	11
12		20	34	37	16	9.7	8.6	12
13		19	36	36	16	9.7	8.6	13
14		19	38	36	16	9.7	8.5	14
15		19	42	36	16	9.6	8.5	15
16		19	42	36	16	9.5	8.4	16
17		18	41	35	16	9.5	8.4	17
18		18	38	34	16	9.3	8.4	18
19		17	38	32	15	9.3	8.4	19
20		17	36	31	15	9.3	8.4	20
21		18	35	30	15	9.2	8.4	21
22		18	34	28	15	9.2	8.4	22
23		19	33	27	15	9.2	8.1	23
24		19	34	26	15	9.2	8.1	24
25		19	35	24	15	9.0	8.1	25
26		19	36	23	14	9.0	8.8	26
27		20	39	22	14	9.0	9.2	27
28		23	43	21	14	8.9	9.2	28
29		23	44	20	14	8.9	9.0	29
30		23	43	19	14	8.8	8.8	30
31			45		14	8.8		31
Mean		19.3	36.6	34.3	15.3	10.1	8.6	Mean
Runoff In Acre-Feet		768	2251	2041	942	622	511	Runoff In Acre-Feet

* Beginning of Record

TABLE 22

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

Day	March	April	May	June	July	August	September	Day
1				20	1.4	0.5	0.4	1
2			11*	19	1.4	0.5	0.3	2
3			16	17	1.4	0.5	0.3	3
4			21	16	1.4	0.5	0.3	4
5			21	16	1.1	0.5	0.3	5
6			22	15	1.1	0.5	0.3	6
7			22	15	1.1	0.5	0.3	7
8			19	14	1.1	0.5	0.3	8
9			15	12	1.1	0.5	0.3	9
10			13	10	1.1	0.5	0.3	10
11			14	8.4	1.1	0.5	0.3	11
12			15	6.9	0.9	0.5	0.3	12
13			18	5.8	0.9	0.5	0.3	13
14			20	3.8	0.9	0.5	0.3	14
15			24	3.3	0.8	0.5	0.3	15
16			24	3.3	0.8	0.5	0.3	16
17			24	3.3	0.7	0.4	0.3	17
18			23	2.8	0.7	0.4	0.3	18
19			21	2.3	0.6	0.4	0.4	19
20			19	2.3	0.6	0.4	0.4	20
21			16	1.4	0.6	0.4	0.4	21
22			15	1.4	0.6	0.4	0.4	22
23			12	1.4	0.6	0.4	0.4	23
24			10	1.4	0.6	0.4	0.4	24
25			10	1.4	0.6	0.4	0.4	25
26			10	1.4	0.6	0.4	0.9	26
27			14	1.4	0.6	0.4	1.3	27
28			16	1.4	0.6	0.4	1.1	28
29			19	1.4	0.6	0.4	0.7	29
30			20	1.4	0.6	0.4	0.5	30
31			19		0.5	0.4		31
Mean			16.9	7.0	0.9	0.5	0.4	Mean
Runoff In Acre-Feet			1037	417	53	28	25	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 23

DAVIS CREEK AT OLD FISH WHEEL

Day	March	April	May	June	July	August	September	Day
1			39	75	22	12	6.4	1
2			42	71	22	12	6.4	2
3			46	70	22	12	6.4	3
4			53	68	21	11	6.8	4
5			58	65	21	11	6.8	5
6			61	66	21	11	7.3	6
7			61	65	20	10	7.6	7
8			58	65	19	9.5	7.6	8
9			52	64	19	9.0	7.6	9
10			51	61	18	9.5	8.5	10
11			52	57	18	10	8.5	11
12			57	54	18	9.5	8.5	12
13			60	53	18	9.0	8.5	13
14			63	50	17	8.5	8.5	14
15			68	48	17	8.1	8.5	15
16			70	47	17	8.1	8.5	16
17			68	46	16	8.1	8.5	17
18			64	44	16	7.6	8.1	18
19			63	42	15	7.3	8.1	19
20		33*	62	39	14	6.8	8.1	20
21		31	58	33	14	6.8	7.6	21
22		31	56	31	14	6.4	7.3	22
23		31	55	30	13	6.4	7.3	23
24		32	55	29	13	6.0	7.3	24
25		32	56	28	13	6.0	7.3	25
26		33	59	27	13	6.0	12	26
27		34	63	23	13	6.0	12	27
28		36	68	22	13	6.0	8.2	28
29		37	70	24	13	6.4	6.4	29
30		37	74	23	13	6.4	6.0	30
31			77		12	6.4		31
Mean		33.4	59.3	47.3	16.6	8.3	7.9	Mean
Runoff In Acre-Feet		728	3648	2817	1021	513	469	Runoff In Acre-Feet

* Beginning of Record

TABLE 24

LINVILLE CREEK AT OLD POWER HOUSE

Day	March	April	May	June	July	August	September	Day
1			2.4	2.7	2.0	2.0	2.0	1
2			2.4	2.7	2.0	2.0	2.0	2
3			2.4	2.6	2.0	2.0	2.0	3
4			2.4	2.6	2.0	2.0	2.0	4
5			2.6	2.5	2.0	2.0	2.0	5
6			2.7	2.5	2.0	2.0	2.0	6
7			2.8	2.6	2.0	2.0	2.0	7
8			3.0	2.5	2.0	2.0	2.0	8
9			3.0	2.5	2.0	2.0	2.0	9
10			2.9	2.4	2.0	2.0	2.0	10
11			2.8	2.4	2.0	2.0	2.0	11
12			2.8	2.4	2.0	2.0	2.0	12
13			2.9	2.3	2.0	2.0	2.0	13
14			3.0	2.2	2.0	2.0	2.0	14
15			3.1	2.2	2.0	2.0	2.0	15
16			3.2	2.2	2.0	2.0	2.0	16
17			3.3	2.2	2.0	2.1	2.0	17
18			3.3	2.2	2.0	2.1	2.0	18
19			3.2	2.2	2.0	2.1	2.0	19
20		2.2*	3.1	2.1	2.0	2.1	2.0	20
21		2.2	2.9	2.1	2.0	2.0	2.0	21
22		2.2	2.8	2.0	2.0	2.0	2.0	22
23		2.2	2.7	2.0	2.0	2.0	2.0	23
24		2.2	2.7	2.0	2.0	2.0	2.0	24
25		2.2	2.7	2.0	2.0	2.0	2.0	25
26		2.2	2.7	2.0	2.0	2.0	2.1	26
27		2.2	2.7	2.0	2.0	2.0	2.3	27
28		2.3	2.7	2.0	2.0	2.0	2.2	28
29		2.3	2.7	2.0	2.0	2.0	2.1	29
30		2.4	2.7	2.0	2.0	2.0	2.0	30
31			2.7		2.0	2.0		31
Mean		2.2	2.8	2.3	2.0	2.0	2.0	Mean
Runoff In Acre-Feet		49	173	135	123	124	120	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 25

FRANKLIN CREEK ABOVE DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1			12	14	4.3	4.2	3.2	1
2			13	14	4.2	4.1	3.2	2
3			14	13	4.2	3.9	3.2	3
4			16	12	3.9	3.9	3.3	4
5			17	12	4.6	3.9	3.4	5
6			17	11	4.9	3.9	3.3	6
7		12*	17	11	4.6	3.9	3.2	7
8		12	16	11	4.5	3.9	3.2	8
9		11	15	10	4.5	3.9	3.2	9
10		11	15	9.8	4.3	3.9	3.3	10
11		11	14	9.2	4.3	3.8	3.4	11
12		10	15	8.7	4.2	3.8	3.4	12
13		9.5	16	8.2	4.3	3.8	3.3	13
14		8.8	17	7.5	4.3	3.8	3.2	14
15		9.7	17	7.5	4.2	3.7	3.2	15
16		9.5	17	7.4	4.2	3.7	3.2	16
17		8.8	17	7.2	4.2	3.7	3.2	17
18		8.3	16	7.2	4.2	3.6	3.2	18
19		8.2	15	7.2	4.2	3.6	3.2	19
20		8.5	15	7.4	4.2	3.4	3.1	20
21		8.7	14	7.4	4.2	3.3	3.1	21
22		8.7	13	7.1	4.2	3.3	3.1	22
23		9.2	13	7.1	4.2	3.3	3.2	23
24		9.7	12	7.1	4.2	3.3	3.2	24
25		9.3	12	6.6	3.9	3.2	3.2	25
26		9.2	12	6.5	4.5	3.2	4.3	26
27		10	13	6.3	4.1	3.2	4.7	27
28		11	13	6.0	4.1	3.2	3.4	28
29		11	14	5.6	4.1	3.2	3.2	29
30		12	14	4.6	4.1	3.2	3.3	30
31			15		4.2	3.2		31
Mean		9.9	14.7	8.7	4.3	3.6	3.3	Mean
Runoff In Acre-Feet		470	904	515	262	222	198	Runoff In Acre-Feet

* Beginning of Record

TABLE 26

JOSEPH CREEK BELOW COUCH CREEK

Day	March	April	May	June	July	August	September	Day
1			16	35	6.1	4.3	2.3	1
2			19	30	6.0	3.9	2.3	2
3			22	21	5.3	3.6	2.3	3
4			26	16	4.3	3.5	2.7	4
5			43	14	4.4	3.2	2.7	5
6			57	14	4.4	3.2	2.7	6
7		28*	59	14	4.4	3.1	2.5	7
8		26	51	14	4.3	3.1	2.5	8
9		22	41	12	4.3	3.1	2.5	9
10		18	26	11	4.3	3.1	2.6	10
11		18	24	10	4.3	3.1	2.6	11
12		15	25	9.1	4.1	3.1	2.6	12
13		15	37	9.1	4.0	3.2	2.2	13
14		21	47	8.9	4.0	3.1	2.0	14
15		33	49	8.9	3.6	3.1	2.0	15
16		33	59	8.8	3.9	3.1	2.0	16
17		17	63	8.5	4.3	3.2	2.0	17
18		16	41	8.3	4.3	3.2	2.0	18
19		15	33	7.8	4.3	3.1	2.2	19
20		14	37	7.8	4.3	3.1	2.2	20
21		14	25	7.7	4.2	3.1	2.0	21
22		14	21	7.7	4.0	2.9	1.9	22
23		14	18	7.7	4.0	2.8	2.0	23
24		17	17	7.5	4.0	2.7	2.2	24
25		16	18	7.2	3.6	2.6	2.2	25
26		14	25	7.1	3.5	2.6	3.2	26
27		14	35	7.0	4.0	2.6	4.3	27
28		17	47	6.8	4.3	2.6	3.1	28
29		17	52	6.4	4.4	2.6	3.0	29
30		16	52	6.3	4.4	2.3	2.8	30
31			41		4.3	2.2		31
Mean		18.5	36.3	11.3	4.3	3.0	2.5	Mean
Runoff In Acre-Feet		88	2233	674	265	187	146	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 27

NORTH FORK PIT RIVER BELOW THOMS CREEK

Day	March	April	May	June	July	August	September	Day
1			76	104	12	5.1	6.1	1
2			81	90	11	5.3	6.1	2
3			92	84	10	5.3	6.1	3
4			112	81	7.0	5.3	6.1	4
5			124	75	7.8	5.1	6.1	5
6		165*	129	77	7.8	4.8	6.1	6
7		160	129	104	7.0	4.8	6.1	7
8		152	148	130	7.0	4.6	6.1	8
9		148	121	88	7.0	4.4	6.1	9
10		148	115	78	7.0	4.4	6.1	10
11		148	110	74	7.0	4.6	6.1	11
12		148	110	68	7.0	4.6	6.1	12
13		148	110	60	6.8	4.6	6.1	13
14		148	117	43	6.8	4.8	6.3	14
15		148	121	35	6.5	4.8	6.5	15
16		148	124	33	6.1	4.8	6.7	16
17		124	146	31	5.9	5.1	6.8	17
18		119	129	29	5.3	5.1	6.8	18
19		110	115	26	5.0	5.5	7.1	19
20		83	152	23	4.5	5.5	7.3	20
21		81	148	22	4.3	5.5	7.5	21
22		81	119	19	4.3	5.7	7.5	22
23		80	102	18	4.3	5.7	7.5	23
24		80	93	19	4.3	5.9	7.5	24
25		76	84	18	4.1	5.9	7.5	25
26		76	83	18	4.1	5.9	7.8	26
27		72	81	16	4.3	5.9	22	27
28		80	83	15	4.5	5.9	13	28
29		76	88	14	4.5	5.9	10	29
30		76	88	13	4.7	5.9	8.3	30
31			103		4.8	6.1		31
Mean		115	111	50.2	6.2	5.3	7.5	Mean
Runoff In Acre-Feet		5702	6809	2985	382	323	447	Runoff In Acre-Feet

* Beginning of Record

TABLE 28

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

Day	March	April	May	June	July	August	September	May
1					2.8	1.2	0.3	1
2					2.8	1.2	0.3	2
3					2.6	1.0	0.3	3
4					2.5	0.8	0.2	4
5				12*	2.5	0.8	0.2	5
6				11	2.5	0.5	0.2	6
7				14	2.3	0.5	0.2	7
8				13	2.1	0.5	0.2	8
9				11	2.2	0.5	0.2	9
10				9.1	2.3	0.5	0.2	10
11				7.8	2.3	0.5	0.3	11
12				7.2	2.2	0.5	0.4	12
13				6.3	1.9	0.4	0.3	13
14				5.8	1.9	0.4	0.3	14
15				5.8	1.9	0.4	0.3	15
16				5.6	1.8	0.4	0.2	16
17				5.4	1.8	0.5	0.2	17
18				5.4	1.6	0.4	0.2	18
19				4.8	1.3	0.4	0.2	19
20				4.6	1.4	0.4	0.3	20
21				4.4	1.5	0.4	0.2	21
22				3.6	1.6	0.4	0.3	22
23				3.6	1.6	0.4	0.3	23
24				3.9	1.5	0.4	0.3	24
25				3.9	1.5	0.4	0.4	25
26				3.1	1.5	0.4	1.2	26
27				3.1	1.5	0.3	4.4	27
28				2.9	1.4	0.3	1.8	28
29				2.8	1.3	0.3	1.0	29
30				2.8	1.3	0.3	0.9	30
31					1.3	0.3		31
Mean				6.3	1.9	0.5	0.5	Mean
Runoff In Acre-Feet				323	116	31	31	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 29

PARKER CREEK AT FOGARTY RANCH

Day	March	April	May	June	July	August	September	Day
1			56*	41	15	5.3	3.6	1
2			56	40	14	5.1	3.6	2
3			56	39	14	4.9	3.5	3
4			56	38	14	4.9	3.5	4
5			55	39	14	4.8	3.5	5
6			53	38	13	4.7	3.6	6
7			52	36	13	4.6	3.6	7
8			51	36	12	4.6	3.6	8
9			50	35	11	4.6	3.6	9
10			51	33	10	4.5	3.6	10
11			51	32	9.8	4.4	3.6	11
12			50	30	9.5	4.4	3.5	12
13			49	29	9.6	4.3	3.5	13
14			49	28	9.3	4.3	3.3	14
15			49	27	9.2	4.3	3.1	15
16			50	25	8.9	4.4	3.1	16
17			52	23	8.8	4.4	3.1	17
18			53	23	8.5	4.3	3.0	18
19			55	22	8.2	4.2	2.9	19
20			57	21	8.1	4.0	2.9	20
21			56	21	7.7	4.0	2.8	21
22			55	21	7.4	4.0	2.8	22
23			52	20	7.1	4.0	2.8	23
24			50	19	6.8	4.0	2.8	24
25			48	18	6.6	3.9	2.8**	25
26			47	18	6.5	3.9		26
27			45	17	6.0	3.9		27
28			44	16	5.8	3.9		28
29			43	16	5.6	3.9		29
30			42	16	5.5	3.7		30
31			42		5.4	3.6		31
Mean			50.8	27.2	9.4	4.3	3.2	Mean
Runoff In Acre-Feet			3124	1620	576	265	162	Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 30

SHIELDS CREEK BELOW PEPPERDINE RANCH

Day	March	April	May	June	July	August	September	Day
1			17*	9.8	5.2	2.2	2.1	1
2			16	9.6	5.2	2.2	2.1	2
3			17	9.5	5.1	2.1	2.1	3
4			19	9.3	5.0	2.0	2.0	4
5			20	9.1	5.0	2.0	2.1	5
6			19	9.0	5.1	2.0	2.0	6
7			18	8.8	5.0	2.0	2.0	7
8			18	8.7	4.9	2.0	1.9	8
9			17	8.5	4.8	2.0	1.8	9
10			16	8.3	4.7	2.1	1.8	10
11			17	8.3	4.6	2.2	1.9	11
12			16	8.1	4.6	2.0	1.9	12
13			16	8.0	4.6	2.0	1.9	13
14			16	8.0	4.5	1.9	2.0	14
15			15	7.8	4.2	2.0	2.0	15
16			14	7.7	4.0	2.2	2.1	16
17			16	7.5	4.0	2.3	2.1	17
18			16	7.3	4.0	2.1	2.2	18
19			14	7.2	3.8	2.1	2.3	19
20			14	7.0	3.7	2.1	2.1	20
21			15	6.8	3.5	2.1	2.2	21
22			15	6.6	3.3	2.0	2.2	22
23			15	6.3	3.2	2.0	2.1	23
24			14	6.2	3.0	2.1	2.0	24
25			13	6.0	2.8	2.1	1.9**	25
26			13	5.9	2.8	2.1		26
27			12	5.7	2.8	2.1		27
28			11	5.6	2.7	2.0		28
29			11	5.4	2.6	2.0		29
30			11	5.2	2.4	2.0		30
31			10		2.3	2.0		31
Mean			15.2	7.6	4.0	2.1	2.0	Mean
Runoff In Acre-Feet			934	451	245	127	101	Runoff In Acre-Feet

* Beginning of Record
** End of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 31

PARKER CREEK ABOVE HIGHWAY 395 NEAR ALTURAS

Day	March	April	May	June	July	August	September	Day
1			53	22	10	1.2	1.0	1
2			55	19	10	1.0	1.0	2
3			56	18	9.4	1.0	1.0	3
4			61	14	6.4	1.0	1.0	4
5			62	13	4.5	0.9	1.1	5
6			64	11	4.5	0.9	1.1	6
7			62	25	4.5	1.0	1.1	7
8			60	27	3.9	1.1	1.1	8
9			55	15	4.8	1.1	1.1	9
10		68*	51	7.5	6.8	1.0	1.1	10
11		61	49	5.2	6.6	0.9	1.2	11
12		58	50	4.8	4.5	0.9	1.2	12
13		61	52	6.8	3.4	1.0	1.2	13
14		63	53	13	3.5	1.0	1.2	14
15		80	51	6.8	3.4	1.0	1.2	15
16		83	51	5.2	2.3	1.2	1.2	16
17		81	56	4.8	1.8	1.4	1.1	17
18		69	48	4.2	2.7	1.8	1.0	18
19		62	47	5.2	3.5	1.7	0.9	19
20		56	63	4.5	3.5	1.7	1.0	20
21		55	52	4.0	3.1	2.0	1.0	21
22		53	46	4.8	2.2	1.7	1.0	22
23		52	44	21	2.1	1.4	1.0	23
24		55	40	15	2.0	1.3	1.0	24
25		56	37	8.2	1.7	1.2	1.1	25
26		52	36	11	1.7	1.2	2.5	26
27		53	39	8.2	1.6	1.1	6.9	27
28		56	41	8.2	1.5	1.0	2.5	28
29		54	41	11	1.4	1.0	1.6	29
30		52	41	13	1.4	1.1	1.5	30
31			30		1.3	1.0		31
Mean		61.0	49.9	11.2	3.9	1.2	1.4	Mean
Runoff In Acre-Feet		2539	3066	667	238	73	83	Runoff In Acre-Feet

* Beginning of Record

Figure 13

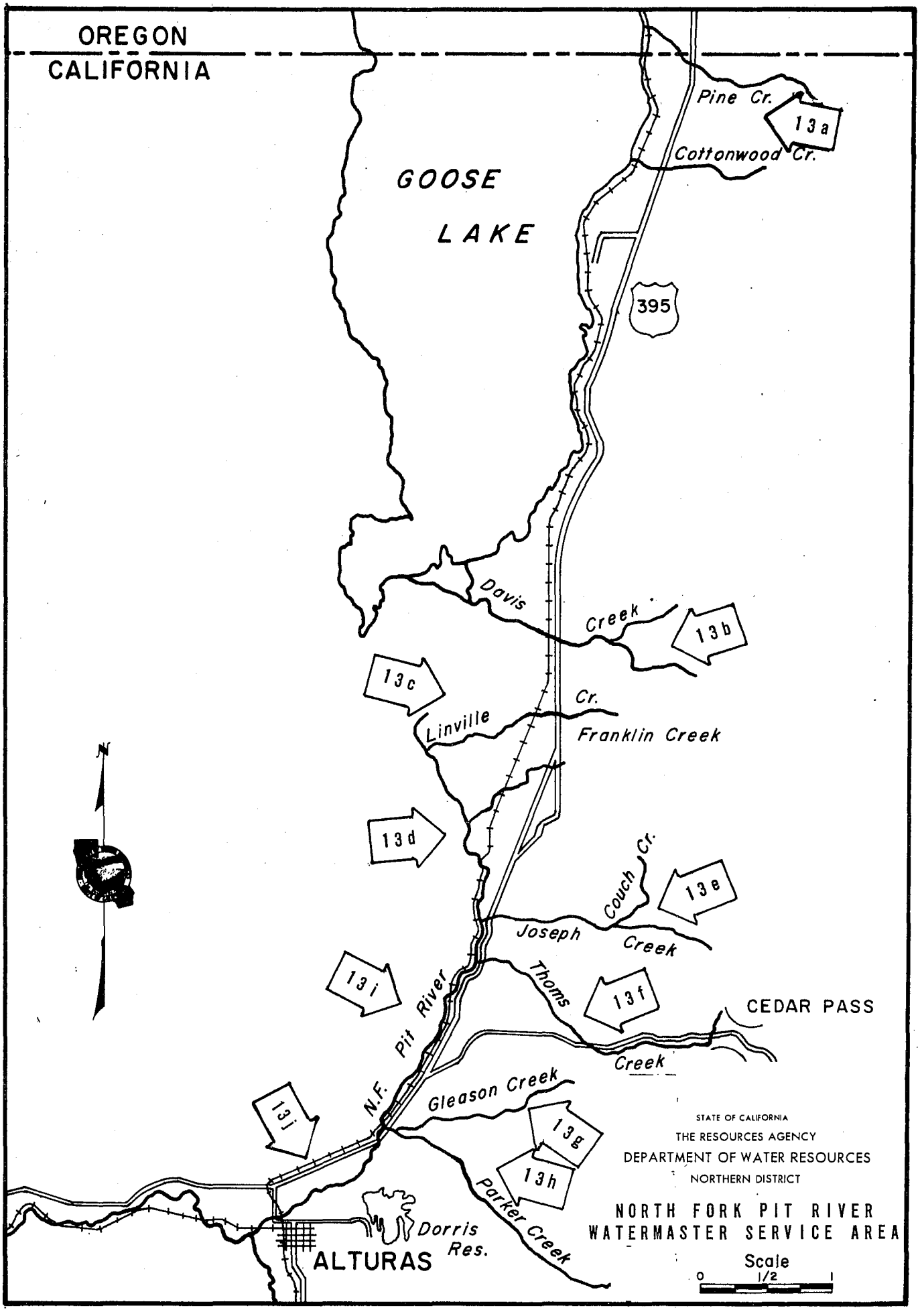
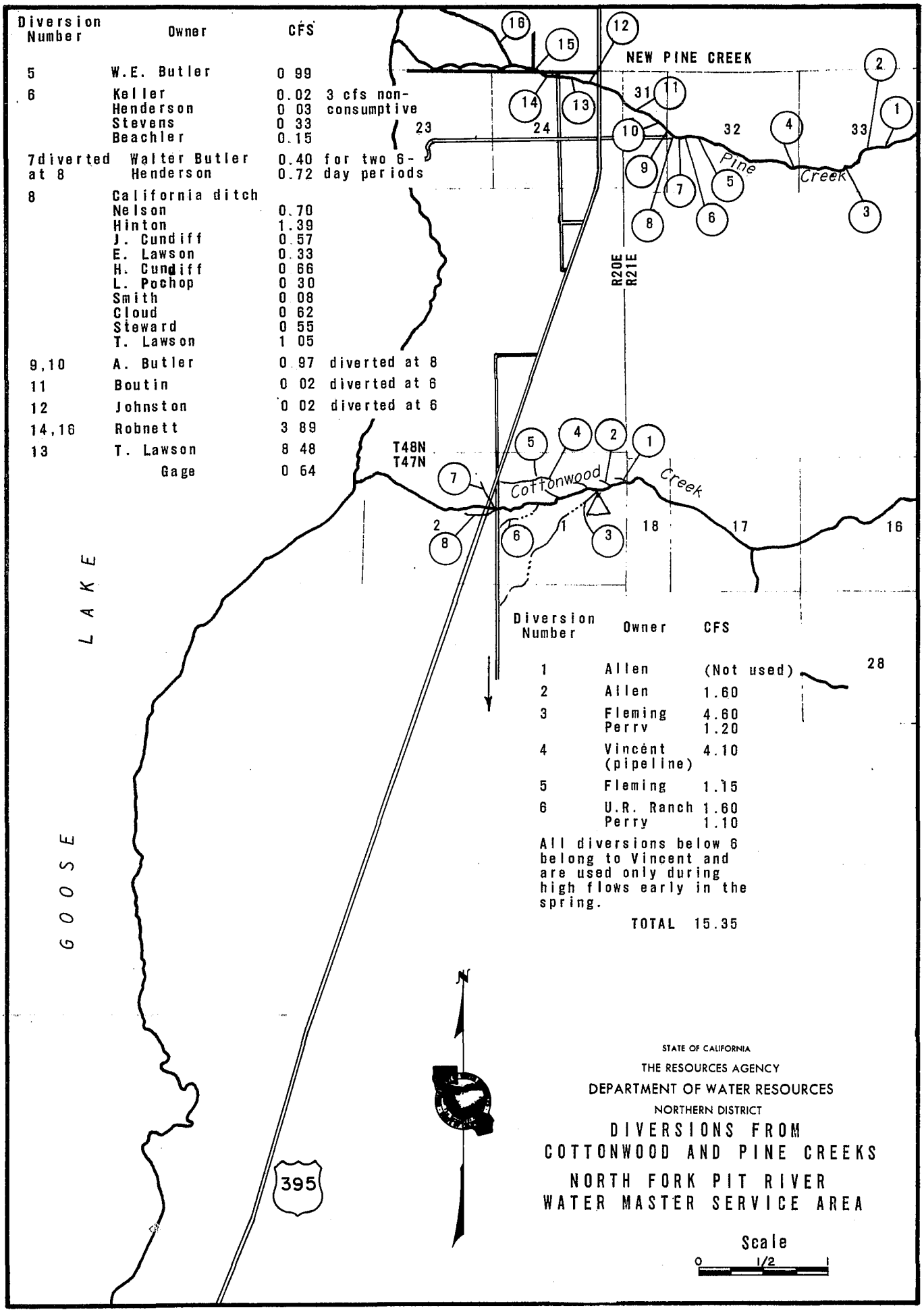
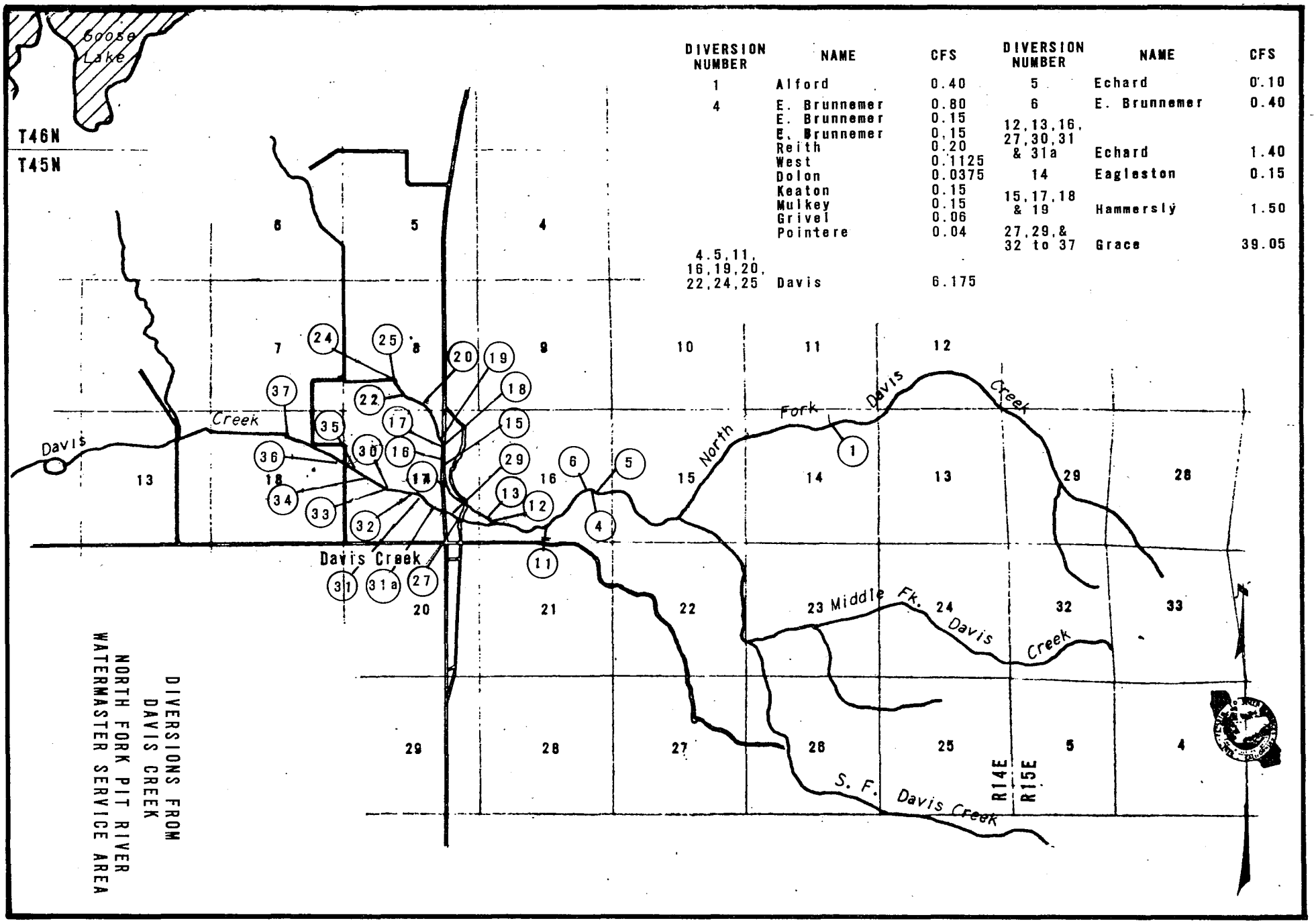

OREGON
CALIFORNIA
GOOSE
LAKE
Pine Cr.
13a
Cottonwood Cr.
395
Davis
Creek
13b
13c
Linville
Cr.
Franklin Creek
N
13d
Couch Cr.
13e
Joseph
Creek
13i
Thoms
13f
CEDAR PASS
Pit River
N.F.
Creek
Gleason Creek
13j
13g
13h
Parker Creek
Dorris
Res.
ALTURAS
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0
1/2
1

Figure 13a


Diversion Number | Owner | CFS
5 | W.E. Butler | 0.99
6 | Keller | 0.02 | 3 cfs non-consumptive
Henderson | 0.03
Stevens | 0.33
Beachler | 0.15
7diverted at 8 | Walter Butler | 0.40 | for two 6-day periods
Henderson | 0.72
8 | California ditch
Nelson | 0.70
Hinton | 1.39
J. Cundiff | 0.57
E. Lawson | 0.33
H. Cundiff | 0.66
L. Pochop | 0.30
Smith | 0.08
Cloud | 0.62
Steward | 0.55
T. Lawson | 1.05
9,10 | A. Butler | 0.97 | diverted at 8
11 | Boutin | 0.02 | diverted at 6
12 | Johnston | 0.02 | diverted at 6
14,16 | Robnett | 3.89
13 | T. Lawson | 8.48
Gage | 0.64
NEW PINE CREEK
Pine Creek
Cottonwood Creek
R20E
R21E
T48N
T47N
LAKE
GOOSE
395
Diversion Number | Owner | CFS
1 | Allen | (Not used)
2 | Allen | 1.60
3 | Fleming | 4.60
Perry | 1.20
4 | Vincent (pipeline) | 4.10
5 | Fleming | 1.15
6 | U.R. Ranch | 1.60
Perry | 1.10
All diversions below 6 belong to Vincent and are used only during high flows early in the spring.
TOTAL 15.35
N
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
COTTONWOOD AND PINE CREEKS
NORTH FORK PIT RIVER
WATER MASTER SERVICE AREA
Scale
0 1/2 1

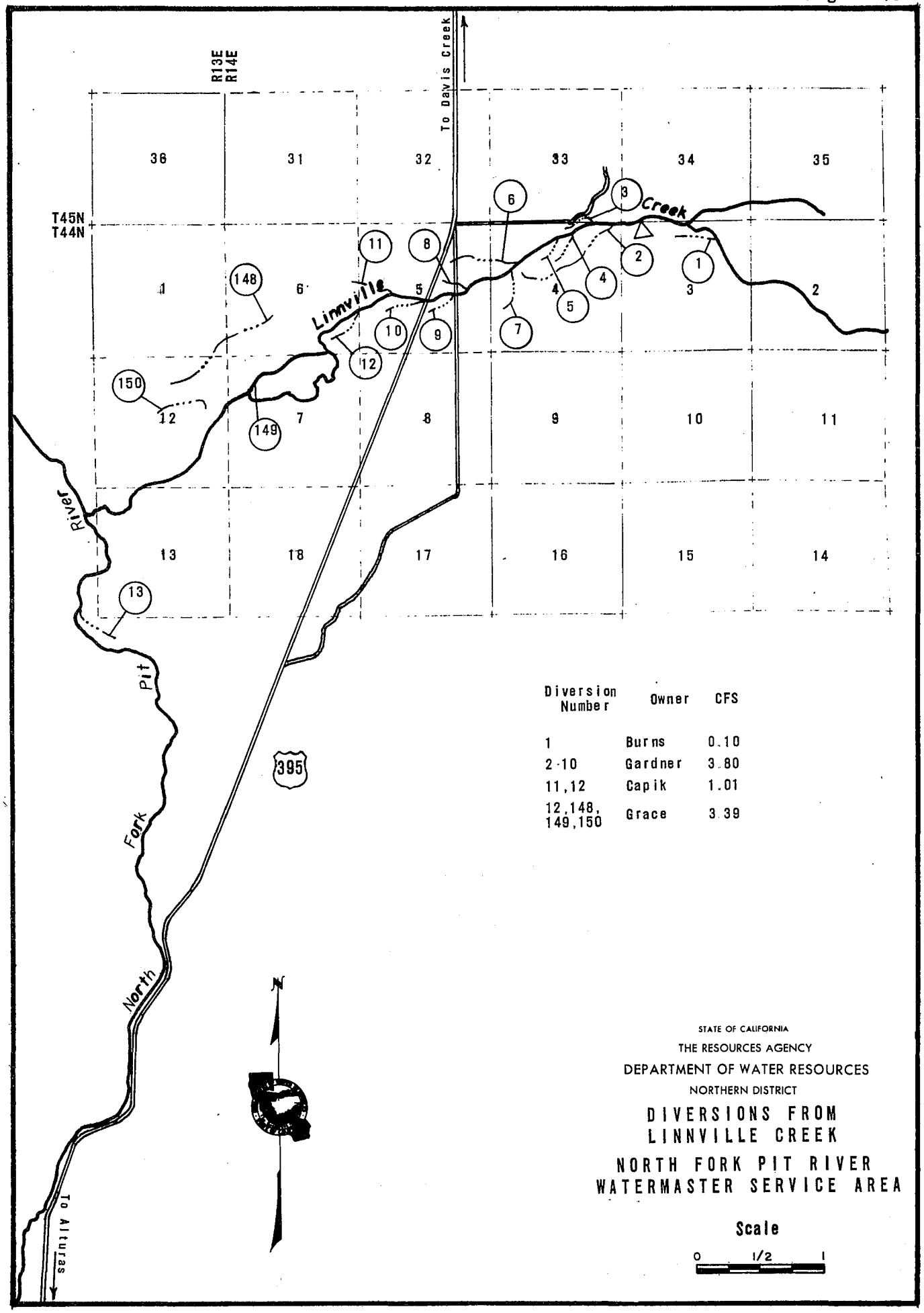


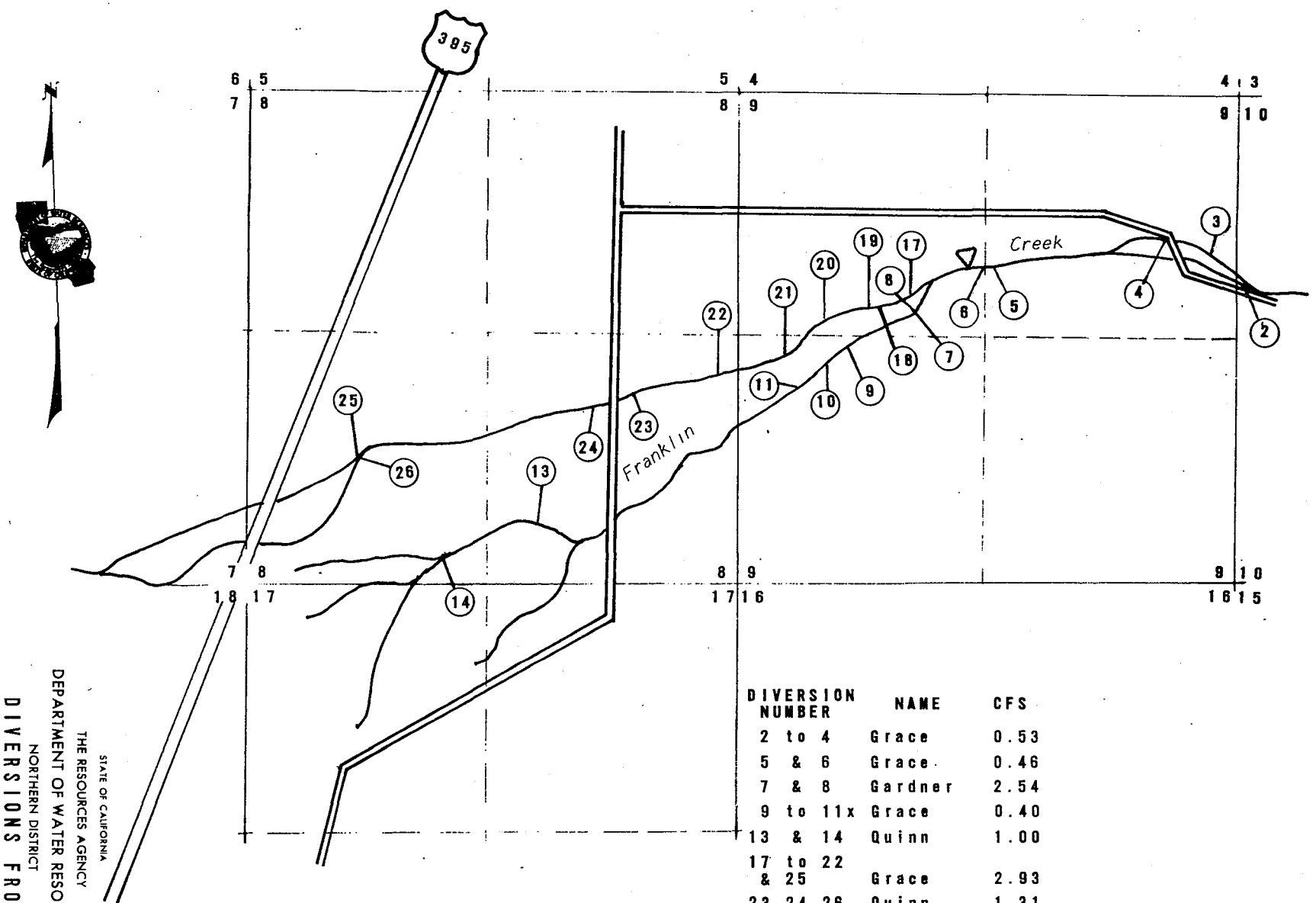
DIVERSION NUMBER	NAME	CFS
1	Alford	0.40
4	E. Brunnemer	0.80
	E. Brunnemer	0.15
	E. Brunnemer	0.15
	Reith	0.20
	West	0.1125
	Dolon	0.0375
	Keaton	0.15
	Mulkey	0.15
	Grivel	0.06
	Pointere	0.04
4.5,11, 16,19,20, 22,24,25	Davis	6.175

DIVERSION NUMBER	NAME	CFS
5	Echard	0.10
6	E. Brunnemer	0.40
12,13,16, 27,30,31 & 31a	Echard	1.40
14	Eagleston	0.15
15,17,18 & 19	Hammersly	1.50
27,29,& 32 to 37	Grace	39.05

Figure 13b

Figure 13c


R13E
R14E
To Davis Creek
36
31
32
33
34
35
T45N
T44N
1
6
5
4
3
2
7
8
9
10
11
12
13
18
17
16
15
14
Creek
Linnville
148
149
150
395
River
Pit
Fork
North
To Alturas
Diversion Number
Owner
CFS
1
Burns
0.10
2-10
Gardner
3.80
11,12
Capik
1.01
12,148, 149,150
Grace
3.39
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
LINNVILLE CREEK
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0
1/2
1



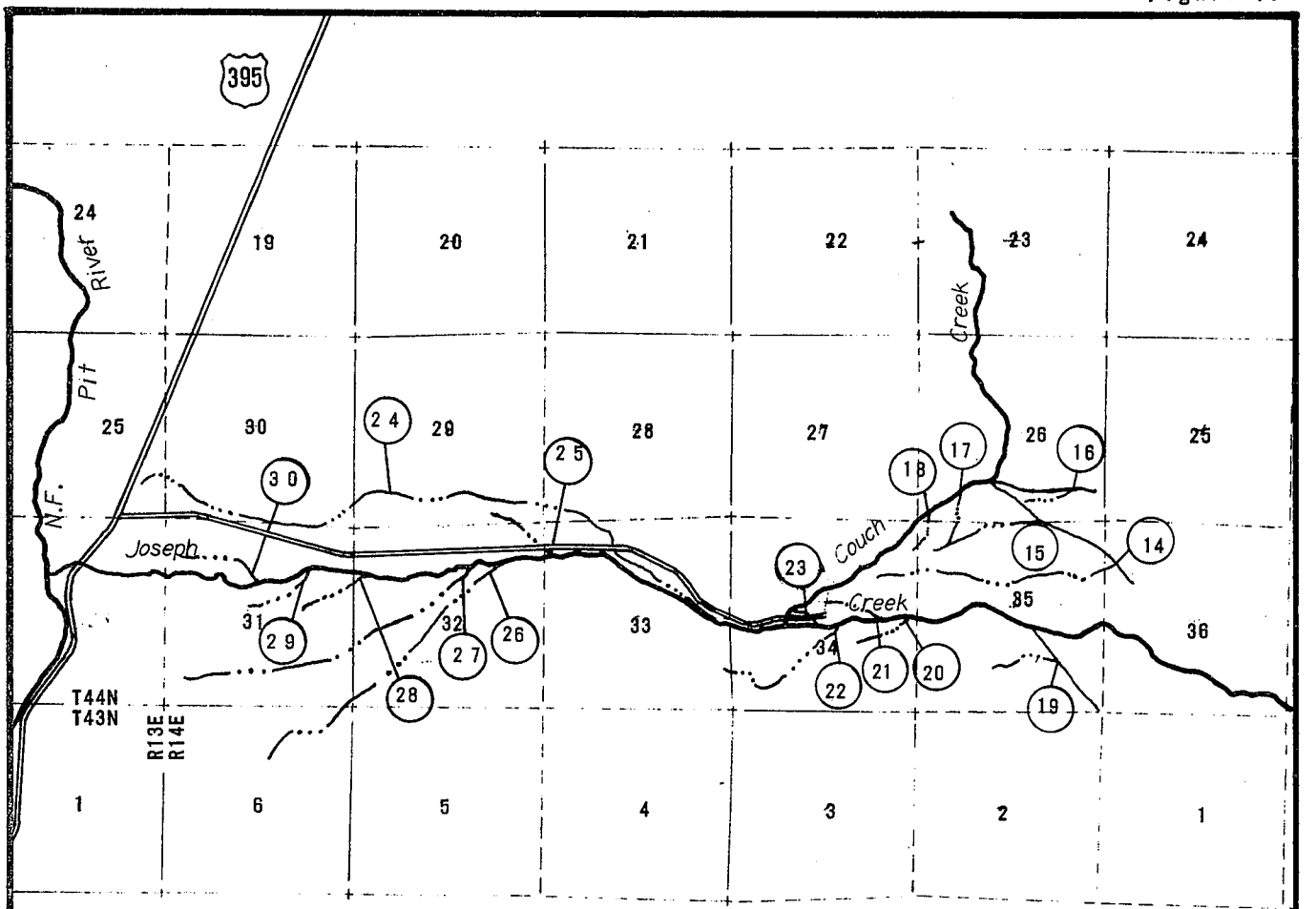
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM FRANKLIN CREEK

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Figure 13d

Figure 13e



Diversion Number	Owner	CFS
14 to 18	U.S. Forest Service	1.15 (net consumptive use)
19	McQueen	
20 to 24	Rice	1.28 (net consumptive use)
22	Russell	0.40
24	Russell	0.50
24,25	Franks	2.53
	Rice	0.87
26	U.S. Indian Service	
27 to 30	Franks	3.55
	TOTAL	11.98
△	Watermaster Record Station	

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM JOSEPH CREEK NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale

0 1/2 1

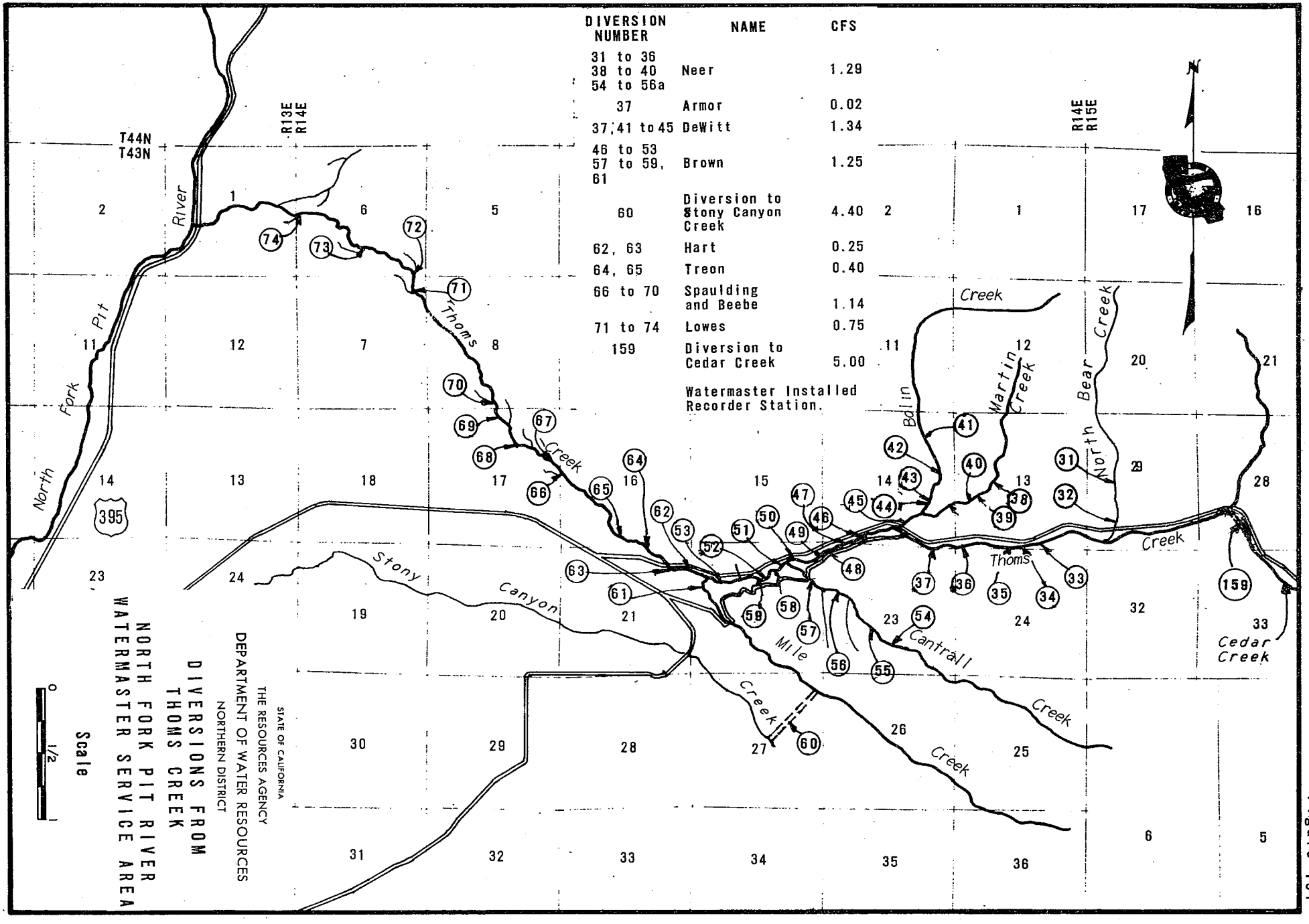

DIVERSION NUMBER
NAME
CFS
31 to 36
38 to 40
54 to 56a
Neer
1.29
37
Armor
0.02
37, 41 to 45
DeWitt
1.34
46 to 53
57 to 59,
61
Brown
1.25
60
Diversion to Stony Canyon Creek
4.40
62, 63
Hart
0.25
64, 65
Treon
0.40
66 to 70
Spaulding and Beebe
1.14
71 to 74
Lowes
0.75
159
Diversion to Cedar Creek
5.00
Watermaster Installed Recorder Station.
T44N
T43N
R13E
R14E
R14E
R15E
North Fork Pit River
Thoms Creek
Stony Canyon
Mile Creek
Cantrall Creek
Bailin Creek
Martin Creek
North Bear Creek
Cedar Creek
395
NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
DIVERSIONS FROM THOMS CREEK
Scale
0
1/2
1
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

Figure 13f

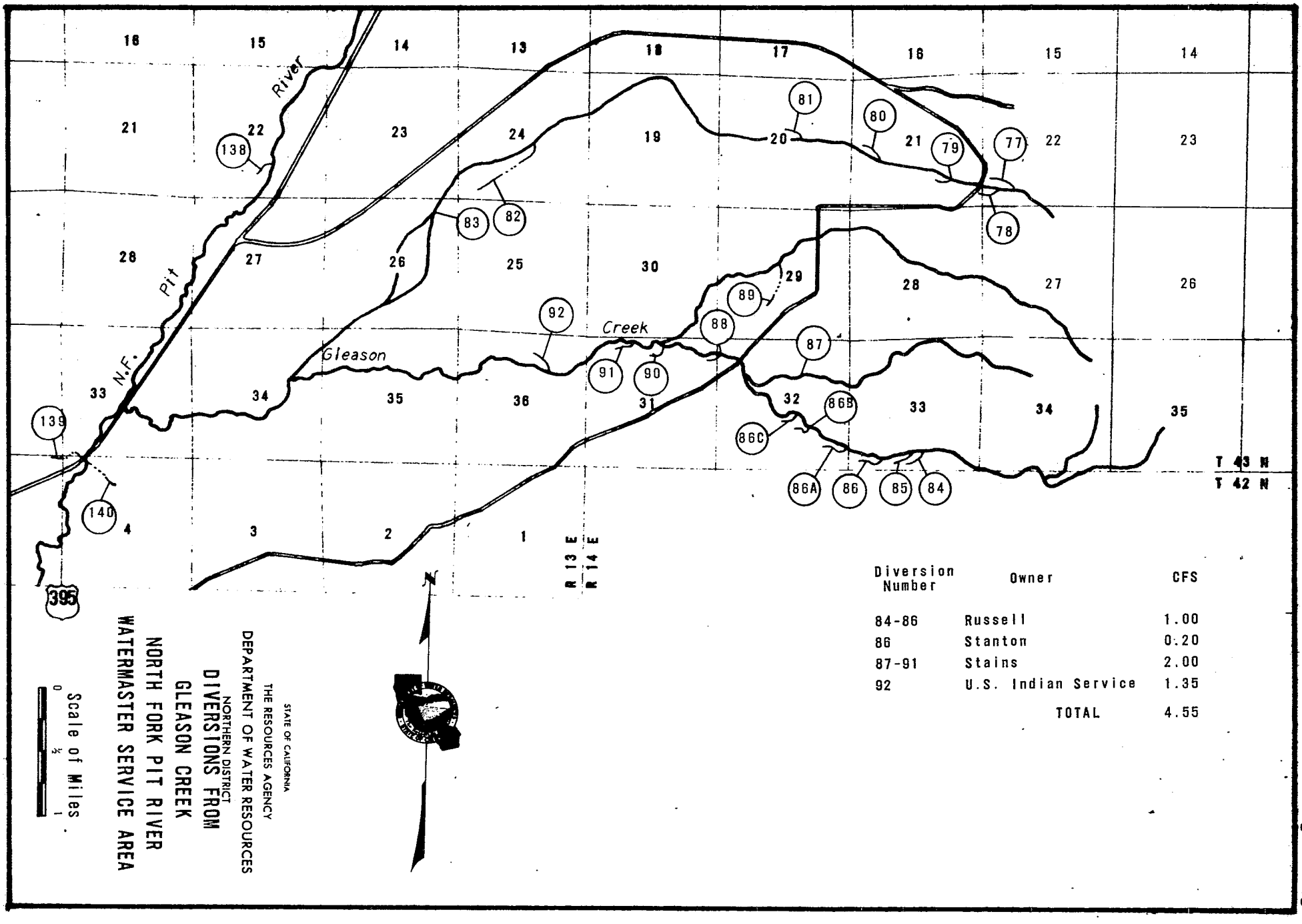

River
Pit
N.F.
Gleason
Creek
T 43 N
T 42 N
R 13 E
R 14 E
395
Scale of Miles
0
½
1
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
GLEASON CREEK
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Diversion Number
Owner
CFS
84-86 Russell 1.00
86 Stanton 0.20
87-91 Stains 2.00
92 U.S. Indian Service 1.35
TOTAL 4.55

Figure 13g

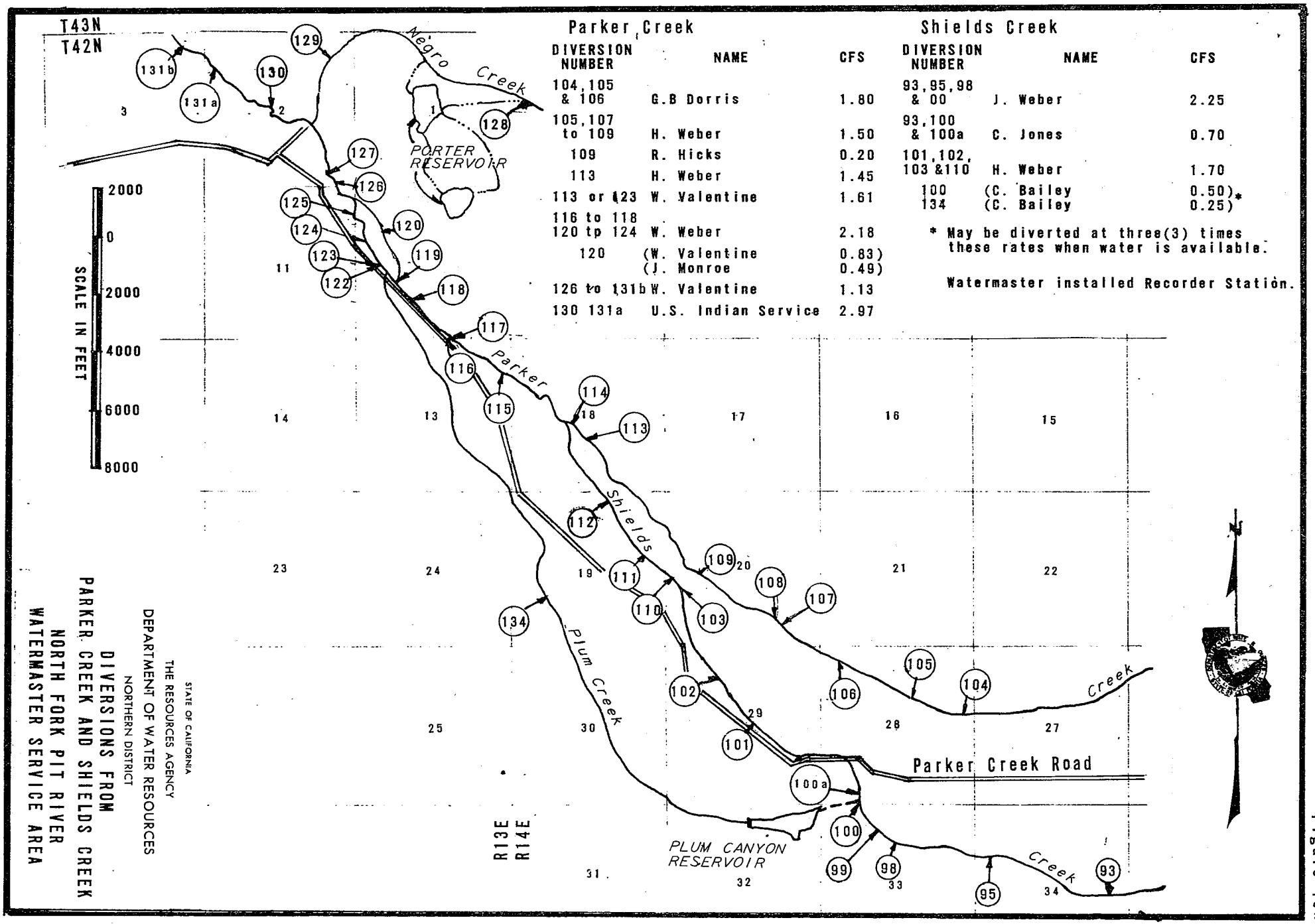
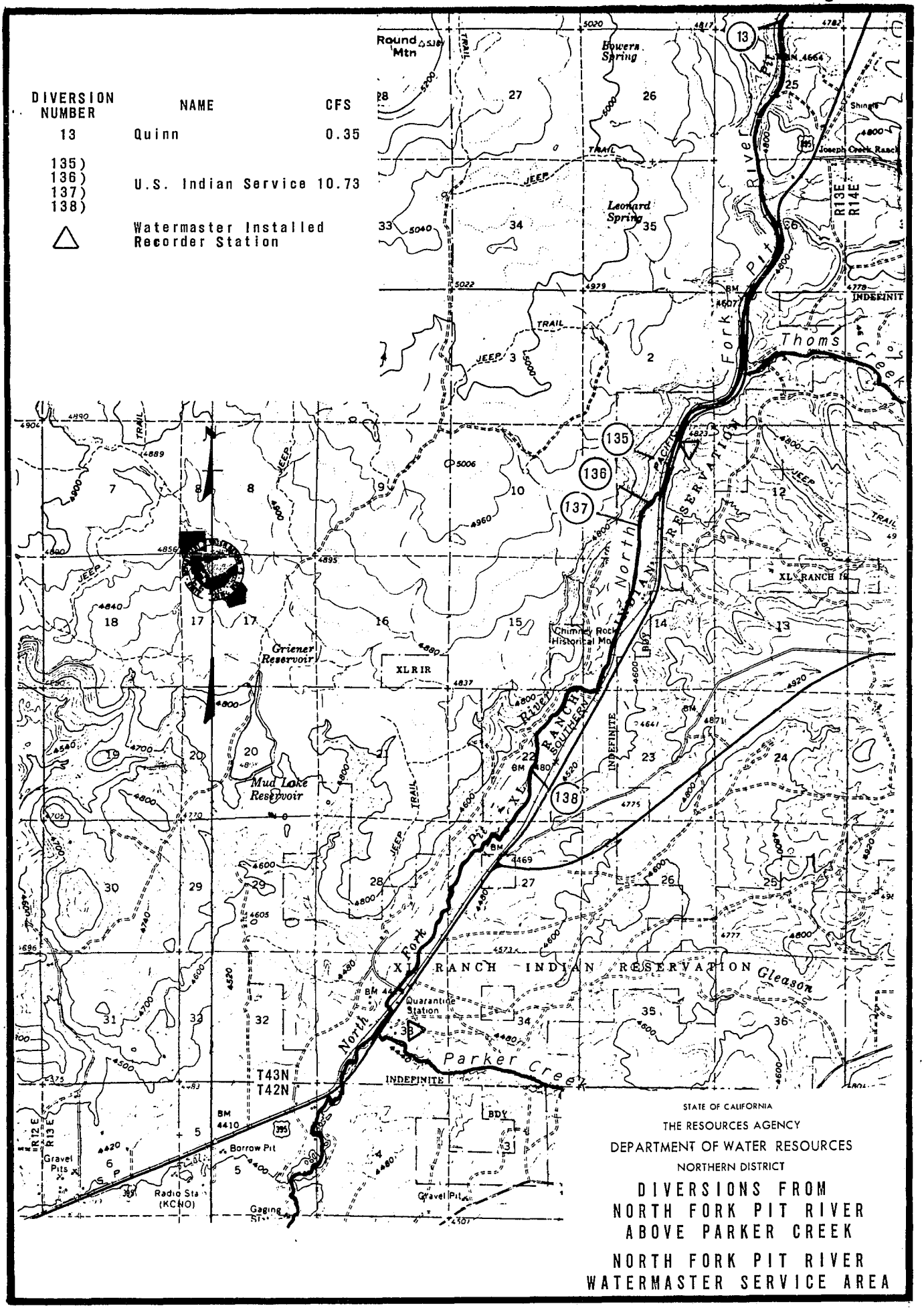

T43N
T42N
R13E
R14E
Negro Creek
PORTER RESERVOIR
Parker Creek
Shields Creek
Plum Creek
PLUM CANYON RESERVOIR
Parker Creek Road
SCALE IN FEET
2000
0
2000
4000
6000
8000
Parker Creek
DIVERSION NUMBER | NAME | CFS
104,105 & 106 | G.B Dorris | 1.80
105,107 to 109 | H. Weber | 1.50
109 | R. Hicks | 0.20
113 | H. Weber | 1.45
113 or 123 | W. Valentine | 1.61
116 to 118 120 tp 124 | W. Weber | 2.18
120 | (W. Valentine | 0.83)
(J. Monroe | 0.49)
126 to 131b | W. Valentine | 1.13
130 131a | U.S. Indian Service | 2.97
Shields Creek
DIVERSION NUMBER | NAME | CFS
93,95,98 & 00 | J. Weber | 2.25
93,100 & 100a | C. Jones | 0.70
101,102, 103 &110 | H. Weber | 1.70
100 | (C. Bailey | 0.50)*
134 | (C. Bailey | 0.25)*
* May be diverted at three(3) times these rates when water is available.
Watermaster installed Recorder Station.
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
PARKER CREEK AND SHIELDS CREEK
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

Figure 13h

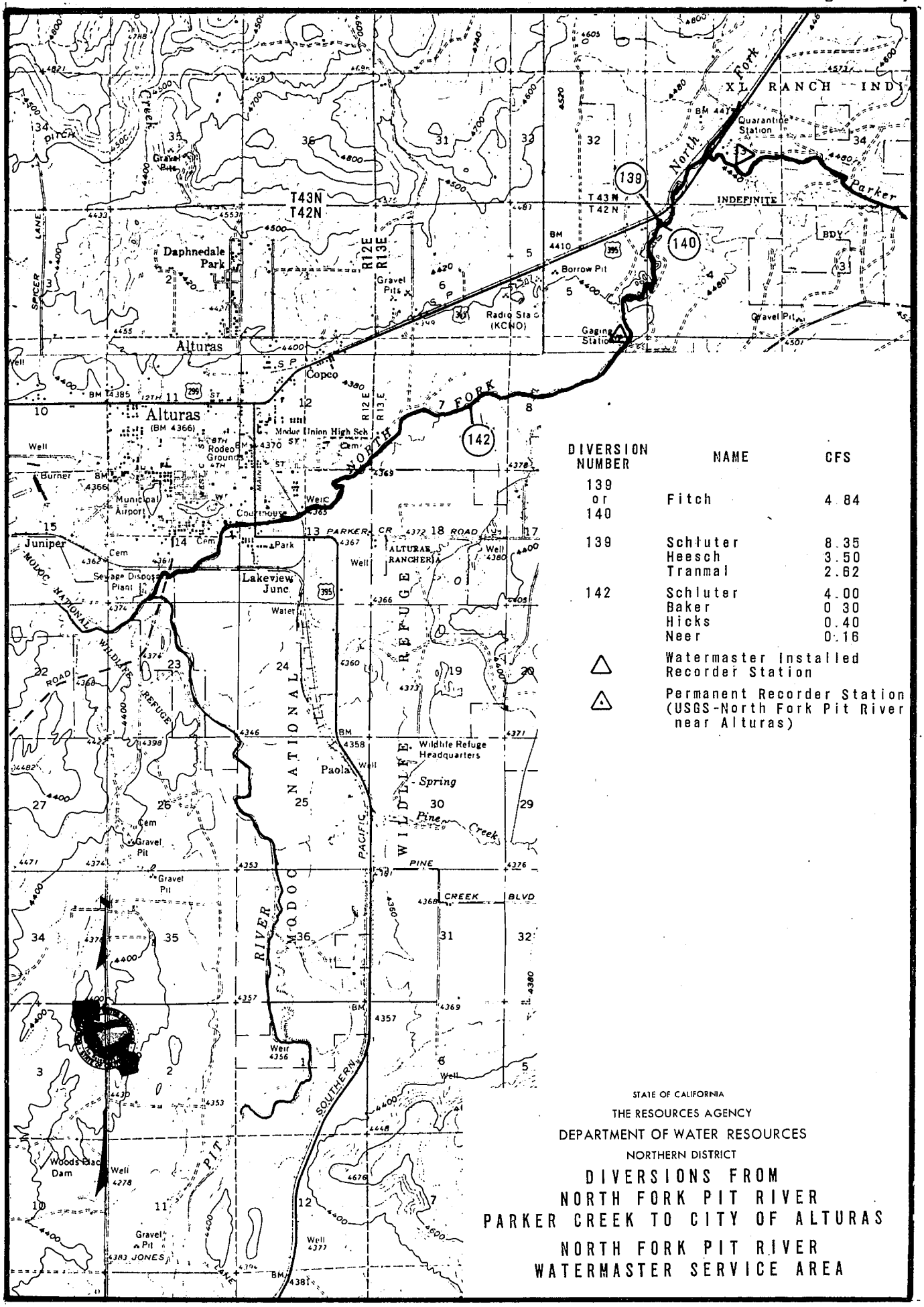


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM NORTH FORK PIT RIVER ABOVE PARKER CREEK

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Figure 13j



DIVERSION NUMBER	NAME	CFS
139 or 140	Fitch	4.84
139	Schluter	8.35
	Heesch	3.50
	Tranmal	2.62
142	Schluter	4.00
	Baker	0.30
	Hicks	0.40
	Neer	0.16

△ Watermaster Installed Recorder Station

△ Permanent Recorder Station (USGS-North Fork Pit River near Alturas)

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM NORTH FORK PIT RIVER PARKER CREEK TO CITY OF ALTURAS

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Pine Creek Watermaster Service Area

The Pine Creek service area is located in southwestern Tehama County and northwestern Butte County, about 30 miles southeast of the City of Red Bluff.

Pine Creek originates on the western slopes of the Sierra-Nevada in the southeastern portion of Tehama County at an elevation of approximately 4,000 feet. The watershed consists mainly of a steep-walled canyon through which the stream flows in a southwesterly course for about 12 miles to the canyon mouth at the edge of the valley floor and upper limit of the service area. The stream then flows westerly about 5 miles to the crossing of State Route 99 at the lower end of the service area, and thence southerly to its junction with the Sacramento River west of Chico. An area of about 22.6 square miles is drained by Pine Creek before it reaches the valley floor.

A map of the Pine Creek stream system is presented in Figure 14, page 105.

Basis of Service

The rights on this creek system were determined by a court reference set forth in Decree No. 7814, Tehama County Superior Court, dated March 13, 1957. The Pine Creek watermaster service area was created June 22, 1972, and service began for the first time on July 1, 1972.

There are seven water right owners in the service area with rights totaling 4.43 cubic feet per second. The decree establishes three priority classes.

Water Supply

Precipitation is generally confined to fall, winter, and early spring months, with less than 10 percent of the total falling between May 1 and September 30.

On July 18, 1972, a streamflow measuring station was installed on Pine Creek above the uppermost active diversion from the stream. The daily mean discharge of Pine Creek above Diversion 2 is presented in Table 32, page 104.

Method of Distribution

One water user pumps directly from the creek and uses a sprinkler system to irrigate his crops. The others divert water from Pine Creek by gravity and irrigate by contour flooding.

1972 Distribution

Kenneth Morgan, Water Resources Engineering Associate, was watermaster in the service area beginning July 1 and continuing until September 30.

The available water supply in Pine Creek served about 60 percent of the third priority allotment during July, August, and September, During the summer of 1972 several ranches were consolidated, which reduced the regulation of water required on Pine Creek. The Pine Creek watermaster service area will be inactive during 1973 as all of the water rights will be controlled by the Marion Ranch.

PINE CREEK WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 32

PINE CREEK ABOVE DIVERSION NO. 2

Day	March	April	May	June	July	August	September	Day
1						2.6	2.6	1
2						2.6	2.6	2
3						2.6	2.6	3
4						2.6	2.6	4
5						2.6	2.7	5
6						2.6	2.8	6
7						2.6	2.8	7
8						2.6	2.7	8
9						2.6	2.7	9
10						2.6	2.8	10
11						2.6	2.8	11
12						2.6	2.9	12
13						2.7	2.8	13
14						2.8	2.8	14
15						2.8	2.8	15
16						2.9	2.8	16
17						2.9	2.9	17
18					2.6*	2.9	2.9	18
19					2.6	2.8	3.0	19
20					2.6	2.8	3.0	20
21					2.6	2.8	2.9	21
22					2.6	2.7	2.9	22
23					2.6	2.7	2.9	23
24					2.6	2.7	2.9	24
25					2.6	2.6	3.0	25
26					2.6	2.6	3.1	26
27					2.6	2.7	3.4	27
28					2.6	2.7	3.1	28
29					2.6	2.7	3.0	29
30					2.6	2.6	3.0	30
31					2.6	2.6		31
Mean					2.6	2.7	2.9	Mean
Runoff In Acre-Feet					72	165	170	Runoff In Acre-Feet

* Beginning of Record

Diversion No. 1 not active in 1972

Figure 14

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

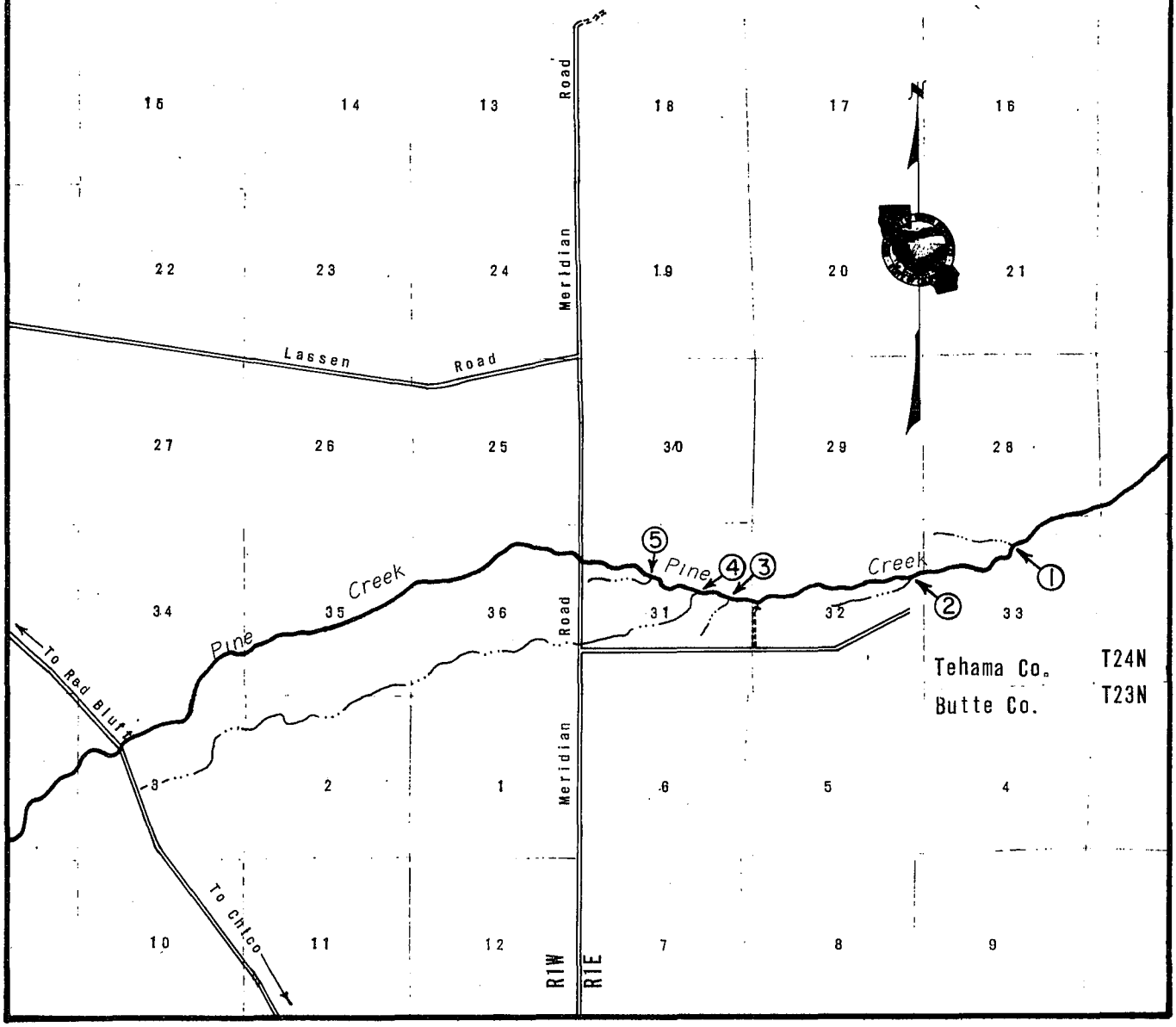
DIVERSIONS FROM PINE CREEK

PINE CREEK WATERMASTER SERVICE AREA

Scale

0 1/2 1

DIVERSION NUMBER	NAME	CFS
1	Roney, Elwin A.	0.200
2	Campbell, Ralph F.	0.850
	McKee, Leonard C.	0.425
	Wurlitzer, Howard	0.425
3	Trout, Rachel R.	1.200
4	Marion, Elmer C.	0.800
	Shelton, John A	0.530
5	(pump)	



Shackleford Creek Watermaster Service Area

The Shackleford Creek service area is located in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water supply for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

Maps of the Shackleford Creek stream system are presented as Figures 15 and 15a, pages 109 and 110.

Basis of Service

The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The Upper Shackleford Creek Group and Lower Shackleford Creek Group each have seven priority classes and the Upper Mill Creek Group and Lower Mill Creek Group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by the owners.

There are presently 42 water users in the service area with allotments totaling 64.73 cfs.

Water Supply

The water supply for Shackleford Creek is derived from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff Lake and Campbell Lake. These lakes are located near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep, mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford ditch.

Method of Distribution

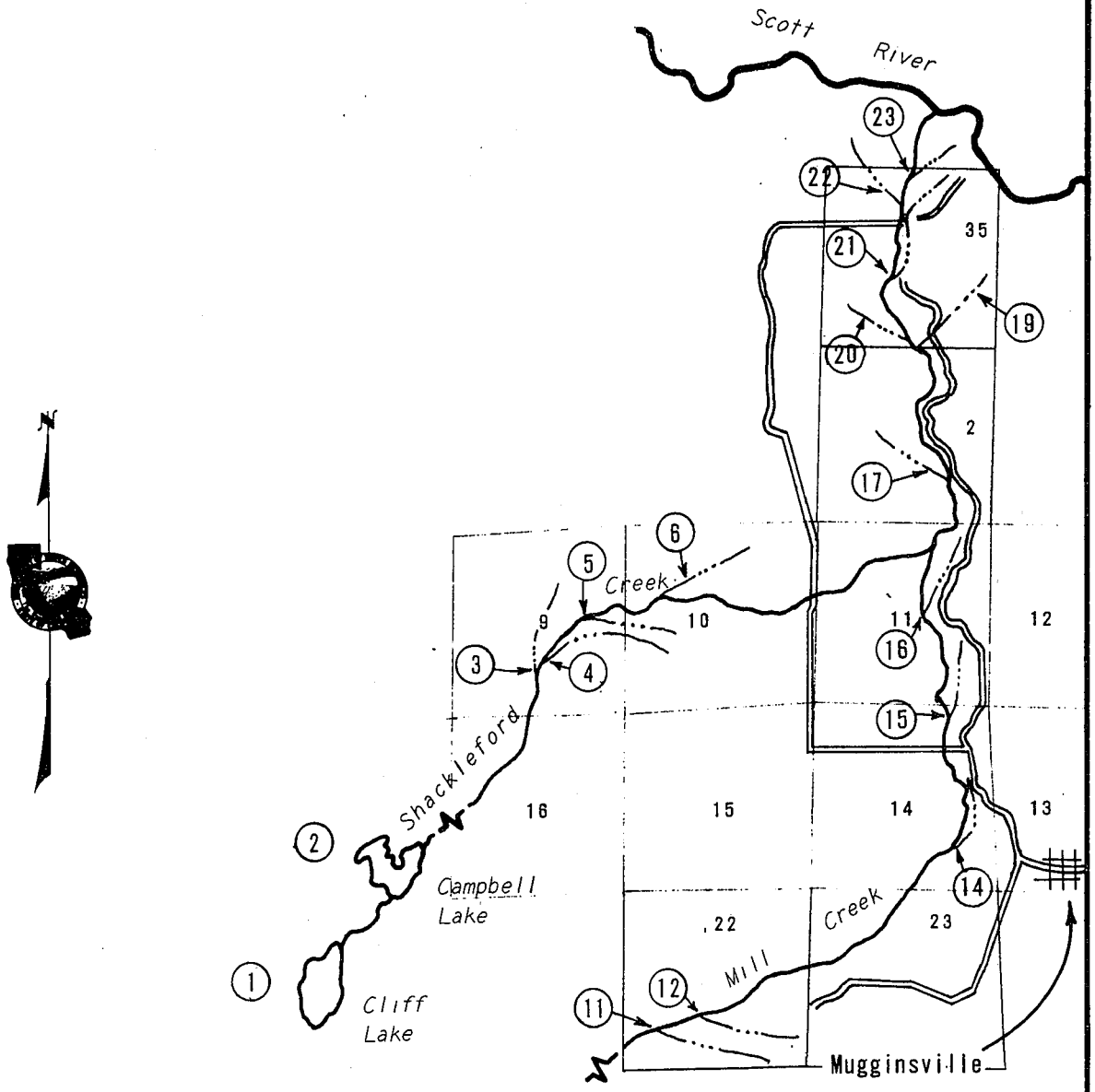
Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cubic feet per second.

1972 Distribution

Watermaster service began June 1 in the Shackleford Creek service area and

continued until September 30, with George H. Pape, Associate Engineer, Water Resources, as watermaster.

The available water supply was about normal early in the season and somewhat below normal after August 1. The available supply was too low to supply fourth priority water rights in late July, and, as flow continued to recede, third priorities had to be shut off in early August. After that there were only first and second priority allotments available through September in decreasing amounts.



Diversion Number	Owner	CFS	
1	Cliff Lake		
2	Campbell Lake		
3	R. Eastlick ditch	3.5	
4	Shackleford ditch	11.00	
5	Howard-Jones ditch	5.20	
6	Camp ditch	5.00	
11	Eastlick ditch	10.62	
12	Couch ditch	.62	out of 11 or 12
14	China ditch	1.40	
15	Dangel ditch	0.50	
16	Denny Bar ditch	0.50	
17	Freita ditch	6.60	
19	Hammond-Crawford-Lewis ditch	3.60	plus rights not in service area
20	Burton-Meanikes ditch	5.80	
22	Burton W.	1.20	in either 22 or23
23	Burton E.		

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK

SHACKLEFORD CREEK WATERMASTER SERVICE AREA

Scale
0 1/2 1

Shasta River Watermaster Service Area

The Shasta River service area is situated in the central part of Siskiyou County, south and east of the town of Yreka.

The source of water supply is Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of U. S. Highway 99, rises on the eastern slopes of the Trinity Mountains. All these streams join the main stem Shasta River above Dwinnell Reservoir near the town of Weed. As the Shasta River flows northward from Dwinnell Reservoir to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the western slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

The place of use is in Shasta Valley which is approximately 30 miles long and 30 miles wide. The valley has numerous small, coneshaped, volcanic hillocks scattered throughout its central portion that produce the effect of dividing the area into a number of distinctively separate parts. Because of these formations only about 141,000 acres of the approximately 507,000 acres within the valley are irrigable. The valley floor elevation averages approximately 3,000 feet.

Maps of the major stream systems in the Shasta River service area are presented as Figures 16 through 16i, pages 119 through 128.

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory adjudication which resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree describes the water rights of the entire stream system in alphabetical order of users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek, 43 priorities; Boles Creek, 20 priorities; Beaughan Creek, 5 priorities; Jackson Creek, 7 priorities; Carrick Creek, 13 priorities; Parks Creek, 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries, 29 priorities; and Little Shasta River, 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches sloughs, but these are not included in the service area.

By agreement with the Montague Water Conservation District, owner of Dwinnell Reservoir, five water users immediately below the reservoir receive a fixed annual allotment of water from storage in lieu of their decreed continuous flow allotments which would be based upon the available natural flow.

A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the lower Shasta River. Owners of these rights are not subject to watermaster supervision,

causing considerable distribution problems during seasons of short water supply.

There are presently 110 water users in the service area with allotments totaling 602.322 cubic feet per second.

Water Supply

The water supply for Shasta Valley is derived from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several portions of the stream system the springs from underground flow are adequate to supply most allotments throughout the season. Much of the underground flow is derived from the northern slopes of Mount Shasta, which rises to an elevation of 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is negligible surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River derive a major portion of their water supply from snowmelt runoff. This flow is usually adequate to supply all allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Dwinnell Reservoir, Big Springs, and Lower Shasta River have enough runoff from springs to supply a large percentage of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are presented in Tables 33, 34, 36-39, pages 115, 117 and 118. The daily mean storage in Dwinnell Reservoir is presented in Table 35, page 116.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is accomplished principally by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is diverted primarily by diversion dams and then conveyed by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka ditch, which has a capacity of about 60 cubic feet per second and a length of about 14 miles. Water is also supplied into ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users association. Some riparian lands are also served by pump diversions.

Many privately owned storage reservoirs exist in the area. Water storage from these reservoirs is used to supplement continuous-flow allotments.

Because of their large rights, close surveillance of two public agencies, Grenada and Big Springs Irrigation Districts, and the privately operated Shasta River Water Users Association, is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam.

1972 Distribution

George H. Pape, Associate Engineer, Water Resources, was watermaster in the Shasta River service area from April 2 through September 30.

The available water supply in the service area was generally below average during the season.

Parks Creek. The flow in Parks Creek was sufficient to supply all allotments (25 priorities) until early June. Some water continued to be diverted into the Yreka ditch until mid-July. The first priority allotments of 6 cubic feet per second were available until mid-August, after which time first priority allotments were met in decreasing amounts for the remainder of the season. Water users downstream from the lowest first

priority diversion received a portion of their allotments during the latter part of the season from return flow and from water rising in the gravel streambed.

Upper Shasta River. During early spring, enough water was available to satisfy all allotments (eight priorities). As the flow decreased, the following levels of priority allotments were met: August 2 - all of fourth priority; August 17 - all of third priority (Yreka ditch main allotment); and September 5 (the seasonal low) - 20 percent of third priority.

Shasta River from Boles Creek to Dwinnell Reservoir. Boles Creek and Shasta River were operated as one stream, under a long-standing oral agreement among the water right owners. The water is distributed on a correlative, equal-priority basis. Adequate water was available to satisfy all allotments until early August. All diversions were then cut to 70 percent. In late September the flow increased to again allow diversion of 100 percent of allotments.

Beaughan Creek. The flow of Beaughan Creek was sufficient to satisfy most demands (five priorities) for the entire season. The creek is routed through a mill pond owned by the International Paper Company which uses approximately 35 percent of the flow for industrial purposes.

Carrick Creek. The water supply in Carrick Creek was adequate to satisfy all allotments (13 priorities) during the entire irrigation season.

Little Shasta River. Enough water was available in Little Shasta River to satisfy all fifth priority allotments (seven priorities) until mid-July, at which time full regulation became necessary to adequately distribute this priority. The flow continued to decrease to approximately 20 percent of the fourth priority allotments by late August. It then stayed constant for the remainder of the season.

The daily mean discharge of Little Shasta River near Montague is presented in Table 37, page 117. This runoff is augmented by rising water along the river channel, and by substantial inflow from Cleland Springs, a tributary approximately 2 miles below the stream gaging station. Therefore, considerable more water was available for distribution at downstream diversion points than is reported in the discharge table.

Dwinnell Reservoir. Releases from Dwinnell Reservoir to Montague Water Conservation District commenced on April 17 and continued into October. Reservoir operation data from the 1972 season are shown in Tables 35 and 36, pages 116 and 117.

By agreement with the Montague Water Conservation District, water users on Shasta River below Dwinnell Reservoir received stored water from the reservoir on demand in lieu of their natural flow rights. The agreement allotment totals and the amount delivered to each user this season are shown in the tabulation on the following page.

Big Springs. The flow of Big Springs was sufficient to satisfy approximately 50 percent of third priority allotments through the first half of the season. As usual during July, August, and September, the flow in Big Springs increased due to snowmelt from higher elevations on Mount Shasta, percolating into the ground and reappearing as surface flow at Big Springs Lake. As a result, Big Springs Irrigation District, a third priority water right owner, was able to pump its full allotment from late July through the remainder of the season.

Lower Shasta River. The water supply in Lower Shasta River was sufficient to satisfy all allotments (29 priorities) for the first half of the season. However, during the second half of the

season close regulation was necessary to satisfy the first priority water rights at the lower end of the river because on numerous occasions the available flow was insufficient to supply all priorities.

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS
BELOW DWINNELL RESERVOIR - 1972

Name of Water Right Owner	Allotment in Acre-Feet	Allotment Delivered from Dwinnell Reservoir Acre-Feet	% of Allotment
Flying L Ranch	198	-0-	-0-
Frank Ayers	464	464	100
J. N. Taylor	1,200	1,095	91.4
Lake Shastina Properties, Inc.			
Hole-in-the Ground Ranch	596	-0-	-0-
Seldom Seen Ranch	924	505	54.7
Totals	3,382	2,064	77.1

SHASTA RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 33

SHASTA RIVER AT EDGEWOOD

Day	March	April	May	June	July	August	September	Day
1	209	85	37	81	17	5.5	7.9	1
2	425	95	37	76	17	6.2	8.9	2
3	648	95	33	73	14	5.5	8.9	3
4	388	104	36	68	14	4.9	8.9	4
5	319	280	43	62	14	4.4	8.9	5
6	260	198	48	62	11	4.4	9.9	6
7	232	141	53	68	11	4.0	9.9	7
8	212	121	50	73	11	4.0	9.9	8
9	220	108	43	93	9.9	4.0	11	9
10	222	99	39	97	9.9	4.0	13	10
11	208	104	38	60	8.9	4.4	13	11
12	195	104	36	46	8.9	4.4	13	12
13	212	93	46	38	8.9	4.4	15	13
14	182	88	60	35	8.9	4.4	15	14
15	163	85	71	32	8.9	4.9	15	15
16	163	85	60	35	7.9	3.7	16	16
17	178	74	64	30	9.9	3.7	15	17
18	175	65	55	27	9.9	3.7	17	18
19	147	60	50	27	6.2	3.9	17	19
20	129	57	104	30	6.3	4.1	17	20
21	119	53	78	27	6.4	4.3	19	21
22	228	48	58	26	6.5	4.5	19	22
23	153	40	48	25	6.6	4.7	19	23
24	133	45	48	22	6.7	4.9	22	24
25	121	38	48	22	6.8	5.2	22	25
26	110	36	55	20	6.9	5.5	22	26
27	101	35	68	19	7.0	5.5	20	27
28	92	37	80	19	7.0	5.5	20	28
29	86	37	85	19	5.5	7.0	19	29
30	83	36	85	18	5.5	7.0	19	30
31	80		88		5.5	7.0		31
Mean	200	84.9	56.3	44.3	9.2	4.8	15.0	Mean
Runoff In Acre-Feet	12280	5050	3260	2640	563	297	895	Runoff In Acre-Feet

TABLE 34

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

Day	March	April	May	June	July	August	September	Day
1					9.8	6.2	4.2	1
2					9.7	6.1	4.2	2
3					9.7	6.1	4.0	3
4					9.7	6.0	3.9	4
5					9.6	6.0	3.9	5
6					9.7	5.8	3.9	6
7					9.6	5.8	3.9	7
8					9.6	5.7	3.7	8
9					9.5	5.8	3.6	9
10					9.5	5.8	3.6	10
11					9.3	5.8	3.6	11
12				12*	9.3	5.7	3.6	12
13				12	9.3	5.7	3.5	13
14				11	9.1	5.7	3.4	14
15				12	8.9	5.7	3.4	15
16				14	8.7	5.7	3.4	16
17				14	8.7	5.4	3.4	17
18				13	8.5	5.6	3.3	18
19				12	8.1	5.6	3.2	19
20				11	8.1	5.4	3.1	20
21				11	7.6	5.4	3.1	21
22				12	7.6	5.3	3.1	22
23				10	7.2	5.3	3.1**	23
24				11	7.1	5.3		24
25				10	6.8	4.9		25
26				10	6.9	4.9		26
27				11	6.9	4.6		27
28				11	6.6	4.5		28
29				10	6.4	4.3		29
30				9.8	6.4	4.3		30
31					6.2	4.3		31
Mean				11.4	8.4	5.4	3.6	Mean
Runoff In Acre-Feet				430	516	335	163	Runoff In Acre-Feet

* Beginning of Record
** End of Record

SHASTA RIVER WATERMASTER SERVICE AREA
October 1, 1971 through September 30, 1972 (in acre-feet)

TABLE 35
DAILY MEAN STORAGE IN DWINNELL RESERVOIR

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Day
1	22,480	21,570	23,790	27,050	33,480	37,730	46,870	45,520	40,790	35,100	26,570	20,240	1
2	22,440	21,570	23,950	27,125	33,550	38,240	46,960	45,290	40,620	34,840	26,300	20,040	2
3	22,410	21,580	24,130	27,200	33,650	39,570	47,000	44,980	40,500	34,430	26,020	19,890	3
4	22,340	21,600	24,180	27,200	33,720	40,450	47,090	44,690	40,370	34,160	25,780	19,750	4
5	22,270	21,650	24,290	27,280	33,820	41,060	47,360	44,440	40,260	33,870	25,550	19,630	5
6	22,140	21,700	24,430	27,320	33,920	41,590	47,770	44,170	40,090	33,570	25,330	19,480	6
7	22,060	21,710	24,560	27,350	33,990	41,880	47,910	43,970	39,940	33,240	25,100	19,340	7
8	21,980	21,780	24,650	27,430	34,070	42,220	48,080	43,720	39,890	32,920	24,880	19,200	8
9	21,860	21,850	24,740	27,460	34,110	42,610	48,130	43,450	39,790	32,640	24,590	19,090	9
10	21,770	21,990	24,860	27,500	34,210	42,950	48,260	43,200	39,820	32,320	24,380	18,950	10
11	21,680	22,030	24,880	27,520	34,280	43,200	48,310	43,000	39,690	32,060	24,140	18,810	11
12	21,570	22,050	24,980	27,610	34,310	43,540	48,380	42,830	39,580	31,840	23,930	18,660	12
13	21,490	22,270	25,030	27,820	34,400	43,820	48,400	42,610	39,380	31,600	23,690	18,520	13
14	21,430	22,370	25,100	27,950	34,450	44,120	48,450	42,410	39,140	31,300	23,490	18,380	14
15	21,420	22,420	25,190	28,040	34,520	44,370	48,490	42,240	38,900	31,040	23,260	18,240	15
16	21,430	22,480	25,240	28,130	34,590	44,620	48,510	42,080	38,700	30,720	23,120	18,140	16
17	21,430	22,550	25,270	28,190	34,660	44,890	48,470	41,980	38,500	30,480	22,800	17,990	17
18	21,430	22,610	25,330	28,340	34,710	45,160	48,310	41,900	38,260	30,160	22,620	17,870	18
19	21,400	22,660	25,370	28,640	34,840	45,340	48,130	41,730	38,050	29,860	22,480	17,650	19
20	21,360	22,720	25,400	28,710	34,910	45,520	47,950	41,770	37,810	29,580	22,280	17,510	20
21	21,360	22,770	25,580	29,300	35,130	45,650	47,770	41,910	37,600	29,330	22,060	17,360	21
22	21,400	22,830	25,640	30,300	35,180	46,010	47,590	41,900	37,270	29,080	21,920	17,250	22
23	21,420	22,900	25,780	31,840	35,350	46,330	47,450	41,850	37,100	28,850	21,720	17,120	23
24	21,460	22,970	25,960	32,290	35,520	46,510	47,390	41,760	36,880	28,630	21,580	17,040	24
25	21,470	23,000	26,380	32,510	35,610	46,600	46,960	41,620	36,710	28,330	21,440	16,910	25
26	21,490	23,150	26,580	32,720	35,760	46,690	46,740	41,470	36,500	28,100	21,300	16,880	26
27	21,500	23,390	26,680	32,820	35,930	46,740	46,510	41,330	36,290	27,820	21,140	16,870	27
28	21,500	23,520	26,750	33,070	36,370	46,780	46,260	41,200	35,980	27,580	20,930	16,830	28
29	21,500	23,590	26,830	33,120	37,240	46,800	45,970	41,100	35,690	27,320	20,790	16,770	29
30	21,510	23,710	26,900	33,310		46,820	45,790	41,010	35,390	27,080	20,620	16,730	30
31	21,540		26,980	33,400		46,850		40,910		26,810	20,440		31

SHASTA RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 36.

DWINNELL RESERVOIR

Day	April	May	June	July	August	September	October	Day
1		77	75	79	78	55	11	1
2		79	79	80	80	54	11	2
3		79	79	86	80	51	14	3
4		75	77	85	80	47	10	4
5		75	74	82	79	47	16	5
6		75	75	81	71	43	21	6
7		77	68	84	71	39	20	7
8		83	61	89	71	38	23	8
9		82	61	89	74	35	28	9
10		82	53	89	74	34	30	10
11		83	49	88	71	38	16**	11
12		83	56	80	68	38		12
13		83	63	78	68	38		13
14		83	69	77	68	39		14
15		83	77	79	68	39		15
16		82	73	82	67	38		16
17	23*	77	71	84	64	39		17
18	45	76	71	84	57	41		18
19	45	73	71	82	56	48		19
20	56	65	73	82	51	47		20
21	58	51	71	79	52	47		21
22	61	42	71	75	51	41		22
23	61	42	71	72	51	35		23
24	60	42	70	70	50	30		24
25	60	48	56	73	45	30		25
26	65	61	53	83	43	17		26
27	72	60	61	82	48	11		27
28	72	68	71	79	55	12		28
29	77	67	76	78	51	11		29
30	77	67	79	78	49	11		30
31		67		78	52			31
Mean	52.3	70.5	68.5	80.9	62.7	36.4	18.2	Mean
Runoff In Acre-Feet	1650	4340	4070	4970	3850	2170	397	Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 37

LITTLE SHASTA RIVER NEAR MONTAGUE

Day	March	April	May	June	July	August	September	Day
1	170	74	58	57	22	13	8.5	1
2	224	118	62	55	21	12	8.4	2
3	300	92	66	53	20	12	8.8	3
4	250	85	73	51	20	12	9.2	4
5	209	89	80	50	19	12	10	5
6	165	82	81	49	19	11	9.6	6
7	161	75	79	48	18	11	8.6	7
8	140	74	76	47	18	11	8.2	8
9	131	68	74	51	18	11	8.1	9
10	125	64	75	51	17	11	8.5	10
11	120	68	76	48	17	11	8.5	11
12	115	62	79	44	16	10	8.5	12
13	110	66	82	41	16	11	8.3	13
14	105	68	83	39	16	11	8.0	14
15	104	71	83	37	16	11	7.9	15
16	107	65	86	37	15	12	7.8	16
17	110	57	90	35	15	11	7.8	17
18	108	52	81	33	15	10	7.7	18
19	100	50	80	32	15	10	8.0	19
20	94	49	94	31	15	10	8.1	20
21	91	51	84	29	15	10	8.1	21
22	108	51	77	28	14	10	8.0	22
23	107	50	74	27	14	10	8.0	23
24	104	52	71	27	14	9.9	8.0	24
25	92	48	68	26	14	9.6	8.1	25
26	82	48	66	25	13	9.4	10	26
27	75	54	64	24	13	9.2	9.9	27
28	71	57	63	24	13	9.1	8.0	28
29	66	52	62	23	13	9.1	7.7	29
30	63	54	61	23	13	9.1	7.5	30
31	61		59		12	8.9		31
Mean	125	64.9	74.4	38.2	16.0	10.6	8.4	Mean
Runoff In Acre-Feet	7672	3860	4576	2271	984	649	499	Runoff In Acre-Feet

SHASTA RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 38

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

Day	March	April	May	June	July	August	September	Day
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15	NO RECORD AVAILABLE FOR 1972 SEASON							15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Mean								Mean
Runoff In Acre-Feet								Runoff In Acre-Feet

TABLE 39

SHASTA RIVER NEAR YREKA

Day	March	April	May	June	July	August	September	Day
1	699	305	92	120	29	18	30	1
2	1460	415	84	104	31	16	51	2
3	2280	418	83	83	47	16	42	3
4	1420	360	85	78	43	20	57	4
5	1080	343	94	77	30	22	64	5
6	843	367	93	69	25	20	54	6
7	725	360	118	77	30	22	44	7
8	637	331	152	85	32	30	38	8
9	579	315	143	79	25	31	36	9
10	543	293	119	130	32	33	39	10
11	543	266	99	149	24	34	51	11
12	520	283	99	140	29	34	45	12
13	512	291	96	124	24	28	48	13
14	485	284	98	117	23	23	55	14
15	459	260	105	90	17	26	62	15
16	432	248	100	81	16	82	64	16
17	428	216	111	80	21	78	62	17
18	428	192	126	77	16	45	69	18
19	402	181	122	72	16	49	76	19
20	381	147	134	64	15	40	78	20
21	360	142	302	60	21	40	88	21
22	406	136	300	55	23	33	126	22
23	547	112	252	54	23	27	135	23
24	490	105	196	50	21	39	135	24
25	419	126	186	51	37	42	132	25
26	385	125	168	45	32	42	135	26
27	360	97	154	45	42	28	183	27
28	347	85	142	44	36	26	149	28
29	335	88	124	38	29	21	137	29
30	309	82	129	32	28	20	143	30
31	297		126		29	23		31
Mean	616	232	137	79.0	27.3	32.5	80.9	Mean
Runoff In Acre-Feet	37910	13830	8390	4700	1680	2000	4820	Runoff In Acre-Feet

Figure 16

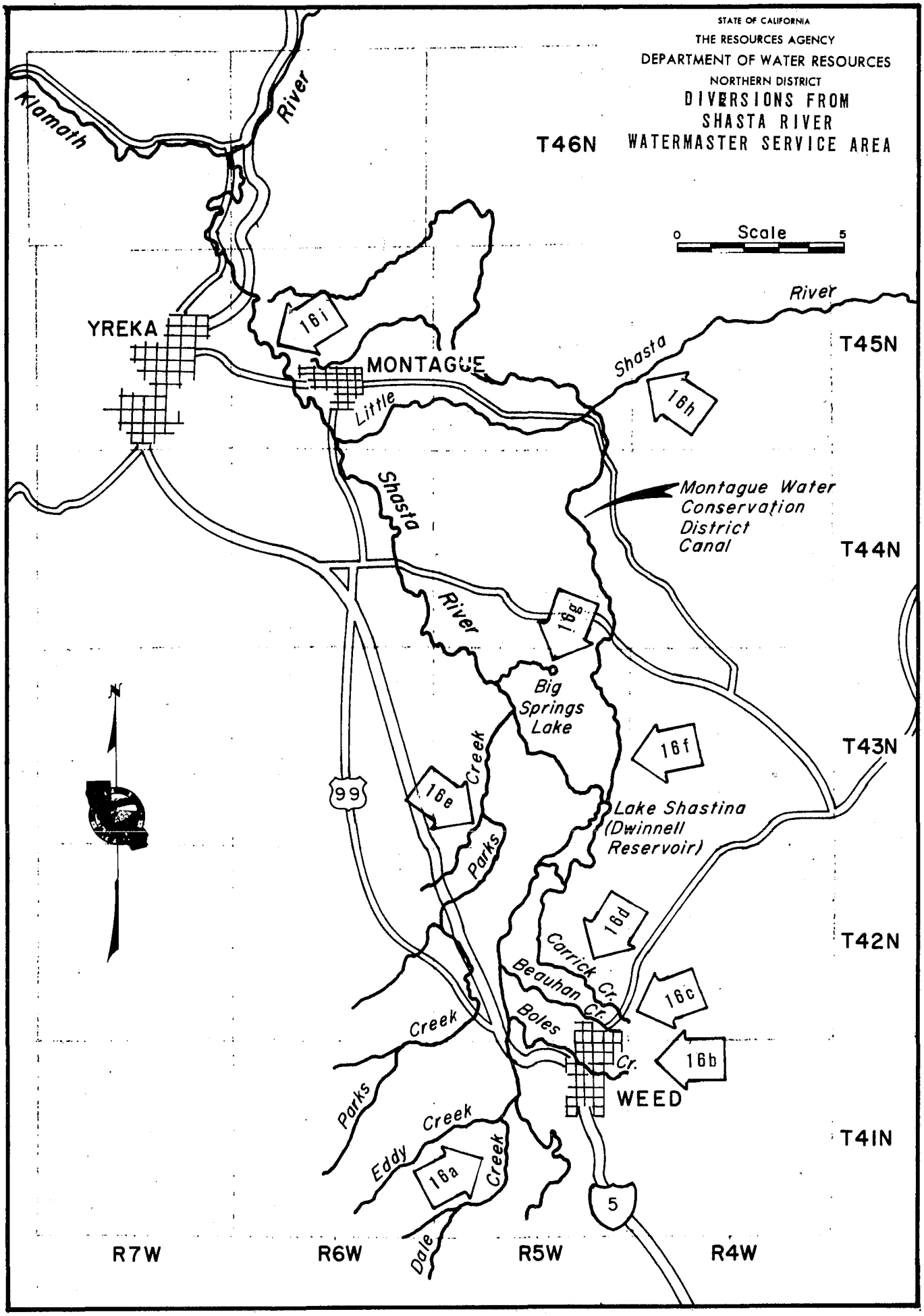

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SHASTA RIVER
WATERMASTER SERVICE AREA
Scale
0
5
Klamath River
YREKA
MONTAGUE
Little Shasta River
Shasta River
Montague Water Conservation District Canal
Big Springs Lake
Lake Shastina (Dwinnell Reservoir)
Parks Creek
Beauhan Cr.
Carrick Cr.
Boles Cr.
Eddy Creek
Dale Creek
WEED
16i
16h
16g
16f
16e
16d
16c
16b
16a
99
5
T46N
T45N
T44N
T43N
T42N
T4IN
R7W
R6W
R5W
R4W
N

Figure 16a

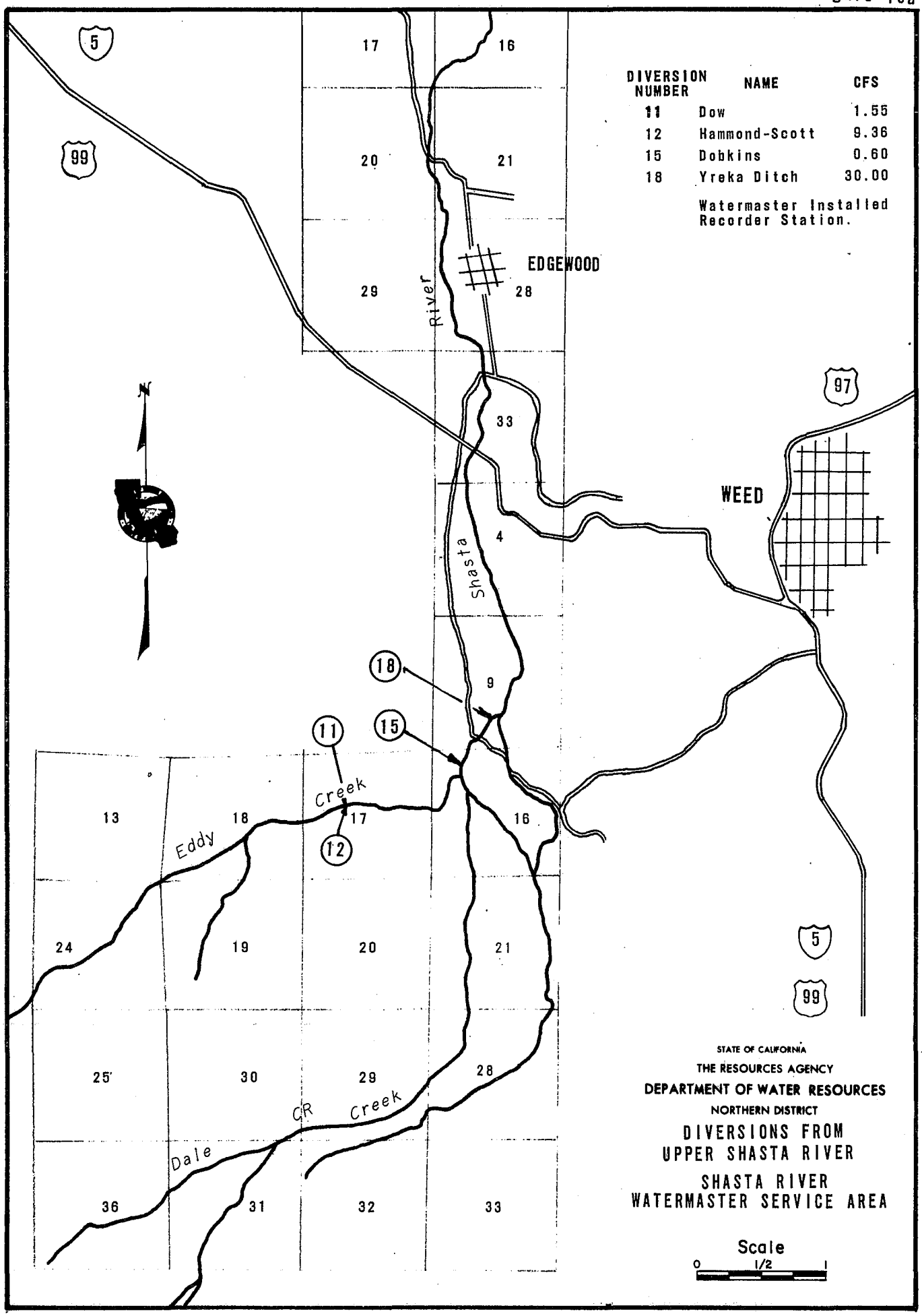
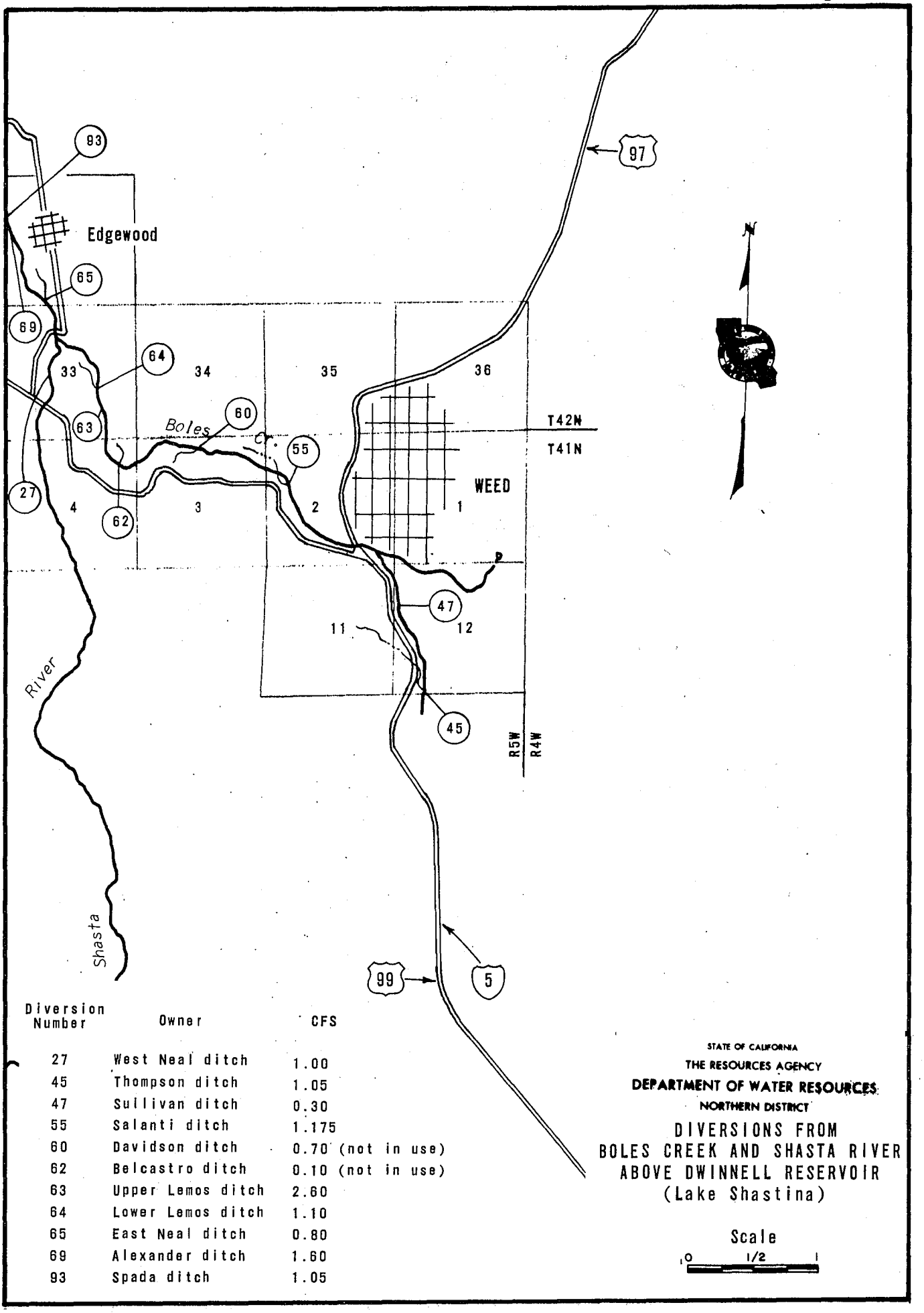

5
99
97
17
16
20
21
29
28
33
4
9
18
15
11
12
13
18
17
16
24
19
20
21
25
30
29
28
36
31
32
33
Shasta River
Eddy Creek
GR Creek
Dale
EDGEWOOD
WEED
N
DIVERSION NUMBER
NAME
CFS
11 Dow 1.55
12 Hammond-Scott 9.36
15 Dobkins 0.60
18 Yreka Ditch 30.00
Watermaster Installed Recorder Station.
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM UPPER SHASTA RIVER
SHASTA RIVER WATERMASTER SERVICE AREA
Scale
0 1/2 1

Figure 16b



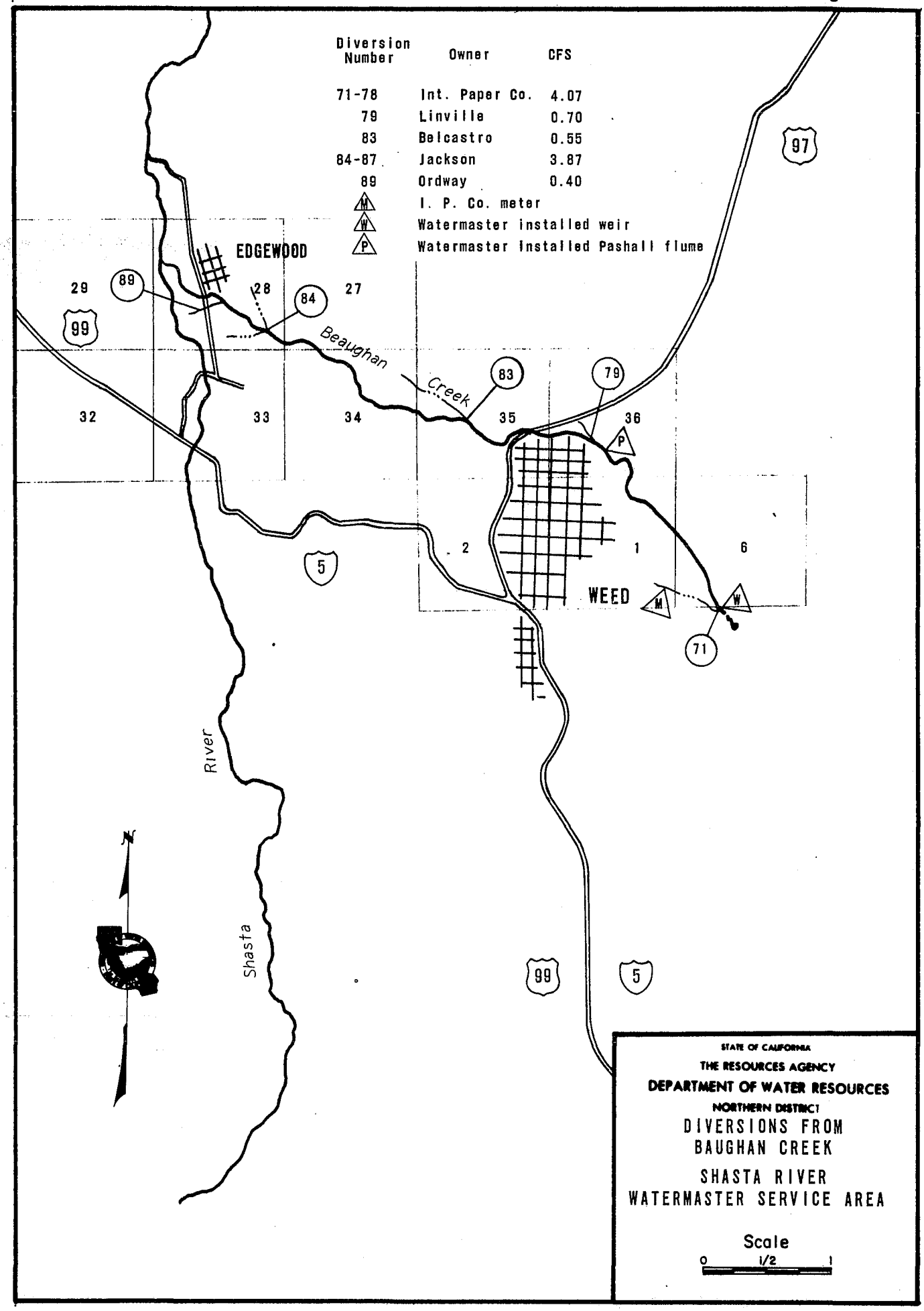
Diversion Number	Owner	CFS
27	West Neal ditch	1.00
45	Thompson ditch	1.05
47	Sullivan ditch	0.30
55	Salanti ditch	1.175
60	Davidson ditch	0.70 (not in use)
62	Belcastro ditch	0.10 (not in use)
63	Upper Lemos ditch	2.60
64	Lower Lemos ditch	1.10
65	East Neal ditch	0.80
69	Alexander ditch	1.60
93	Spada ditch	1.05

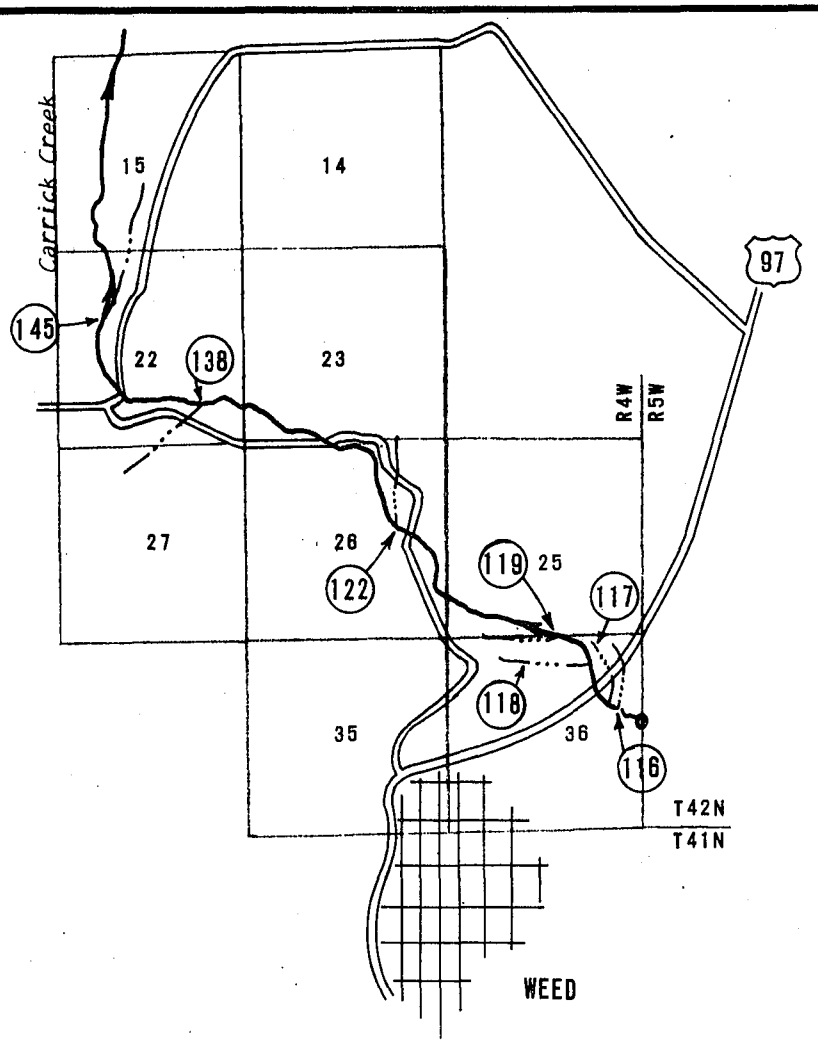
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
BOLES CREEK AND SHASTA RIVER
ABOVE DWINNELL RESERVOIR
(Lake Shastina)

Scale
0 1/2 1

Figure 16c


Diversion Number
Owner
CFS
71-78 Int. Paper Co. 4.07
79 Linville 0.70
83 Belcastro 0.55
84-87 Jackson 3.87
89 Ordway 0.40
M I. P. Co. meter
W Watermaster installed weir
P Watermaster installed Pashall flume
EDGEWOOD
WEED
Beaughan Creek
Shasta River
97
99
5
89
84
83
79
71
29
28
27
32
33
34
35
36
2
1
6
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM BAUGHAN CREEK
SHASTA RIVER WATERMASTER SERVICE AREA
Scale
0 1/2 1



Diversion Number	Owner	CFS
116	Albee ditch	2.20
117	Carrick ditch	2.20
118	Belcastro-Vidrickson ditch	0.40
119	Vidrickson ditch (Can also be used in 118)	0.40
122	Hoy ditch	0.86
138	Jackson ditch	1.20
145	Mills ditch	1.10

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM CARRICK CREEK

SHASTA RIVER WATERMASTER SERVICE AREA

Scale
0 ½ 1

Figure 16

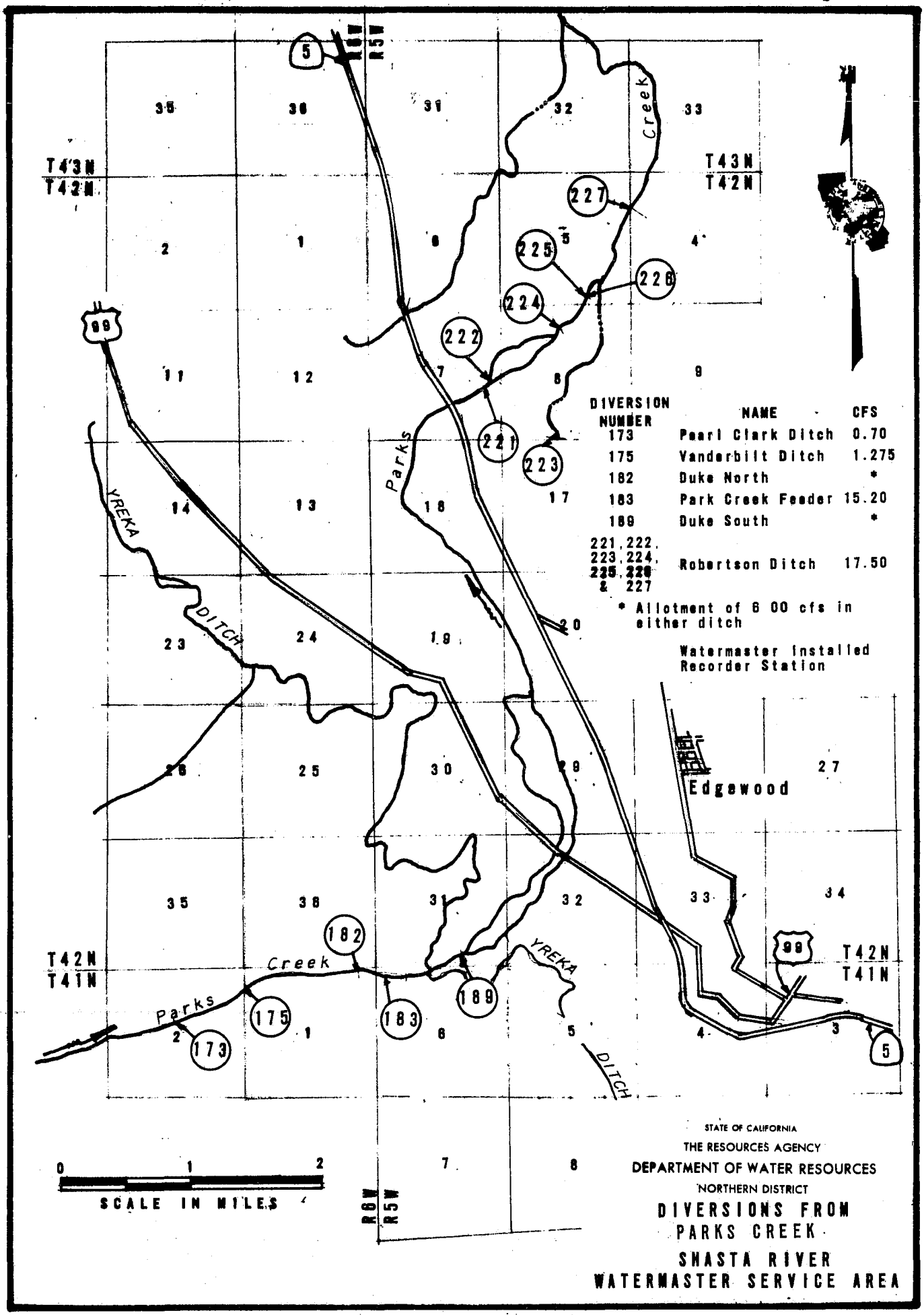
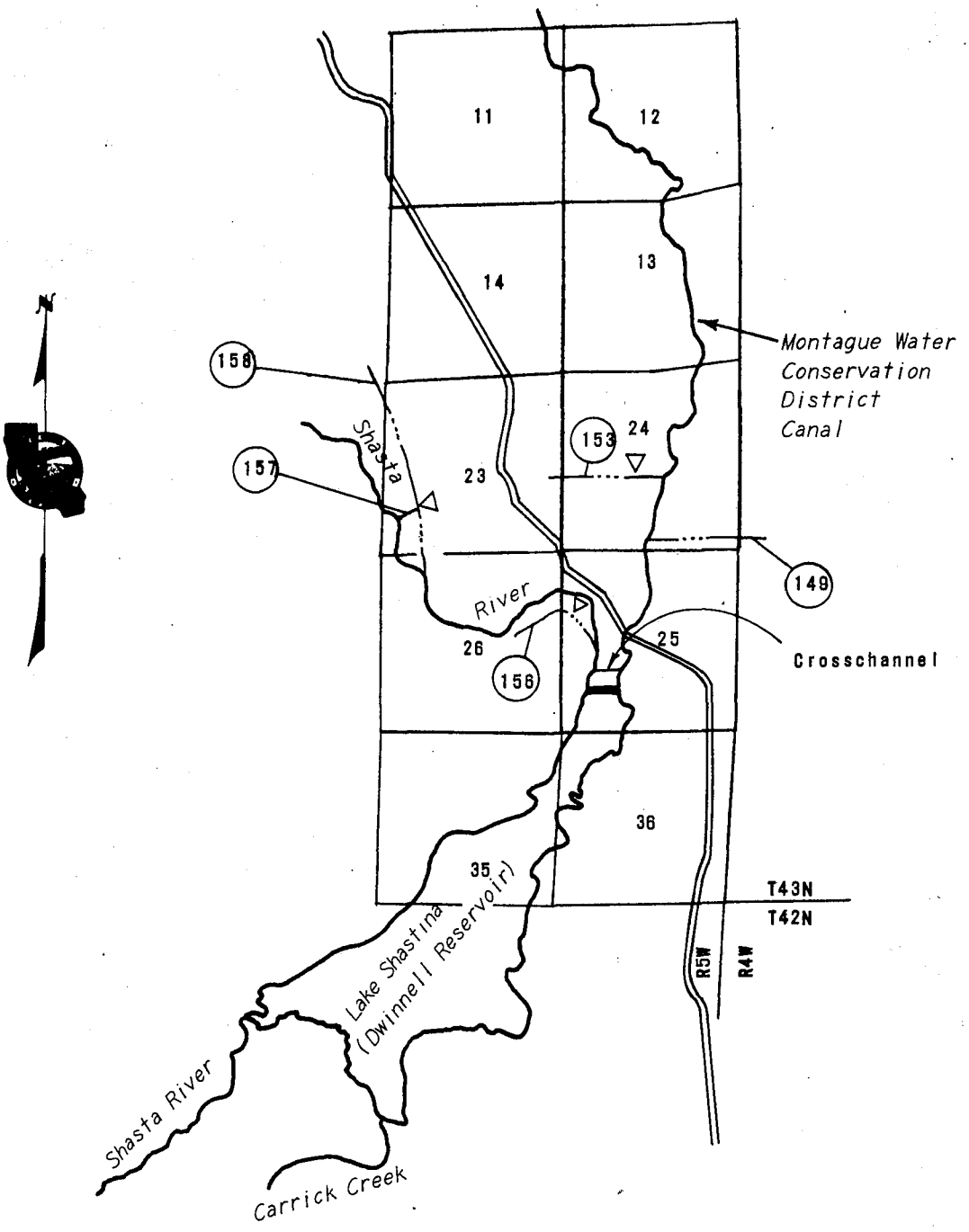

T43N
T42N
R5W
Creek
Parks
YREKA
DITCH
Edgewood
T42N
T41N
99
5
182
175
173
183
189
225
226
224
222
221
223
227
DIVERSION NUMBER
NAME
CFS
173 Pearl Clark Ditch 0.70
175 Vanderbilt Ditch 1.275
182 Duke North *
183 Park Creek Feeder 15.20
189 Duke South *
221, 222, 223, 224, 225, 226 & 227 Robertson Ditch 17.50
* Allotment of 6 00 cfs in either ditch
Watermaster Installed Recorder Station
0 1 2
SCALE IN MILES
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM PARKS CREEK
SHASTA RIVER WATERMASTER SERVICE AREA

Figure 16f



T43N ; R5W

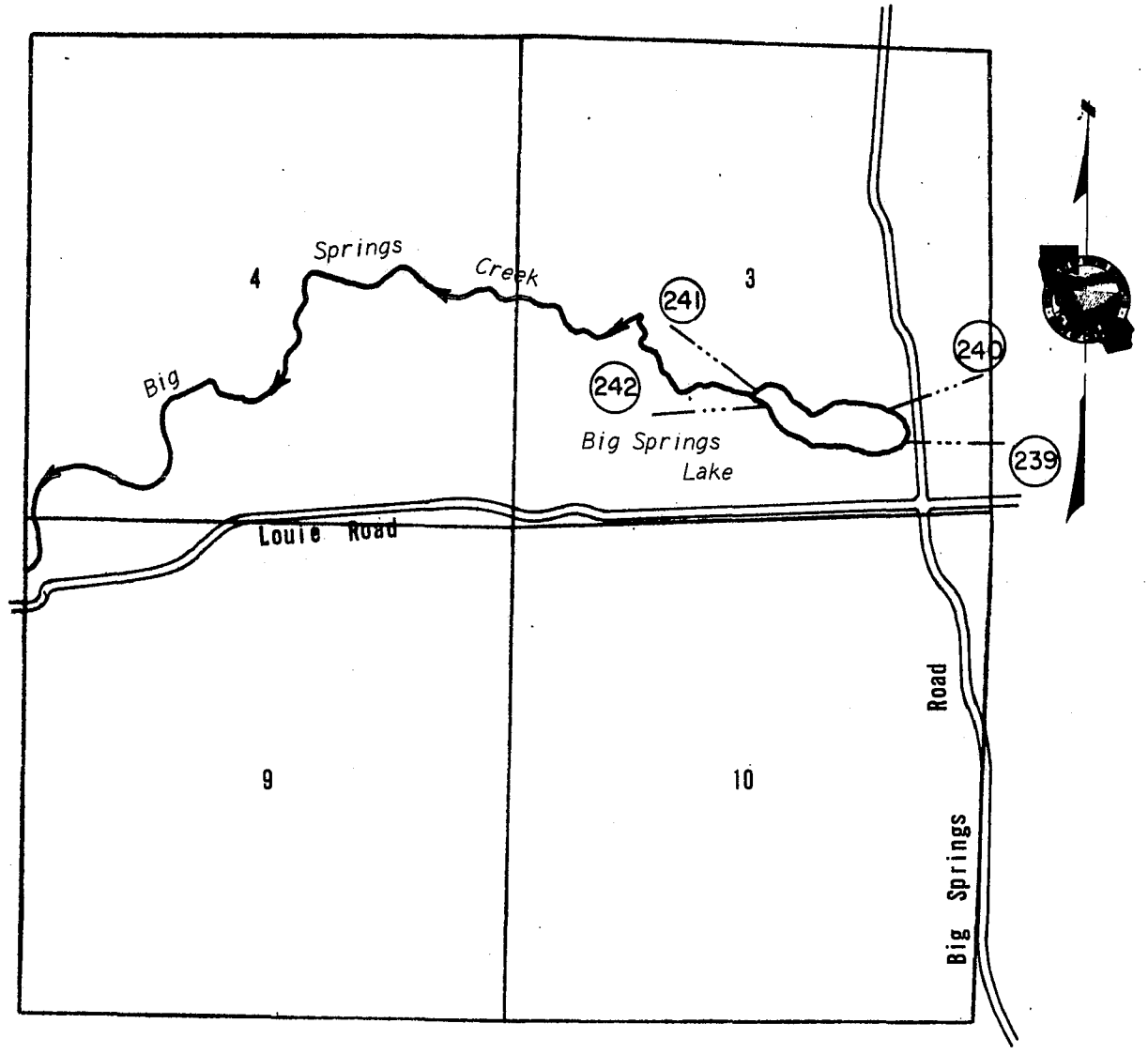
Diversion Number	Owner	Acre-Feet
149	Flying L Ranch	198-pump
153	Taylor ditch	1200
156	Seldom-Seen Ranch	924
157	Hole-in-the-Ground Ranch	596
158	Ayers	464

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
SHASTA RIVER PRIOR RIGHTS
BELOW DWINNELL RESERVOIR
(Lake Shastina)

SHASTA RIVER
WATERMASTER SERVICE AREA

0 1/2 1



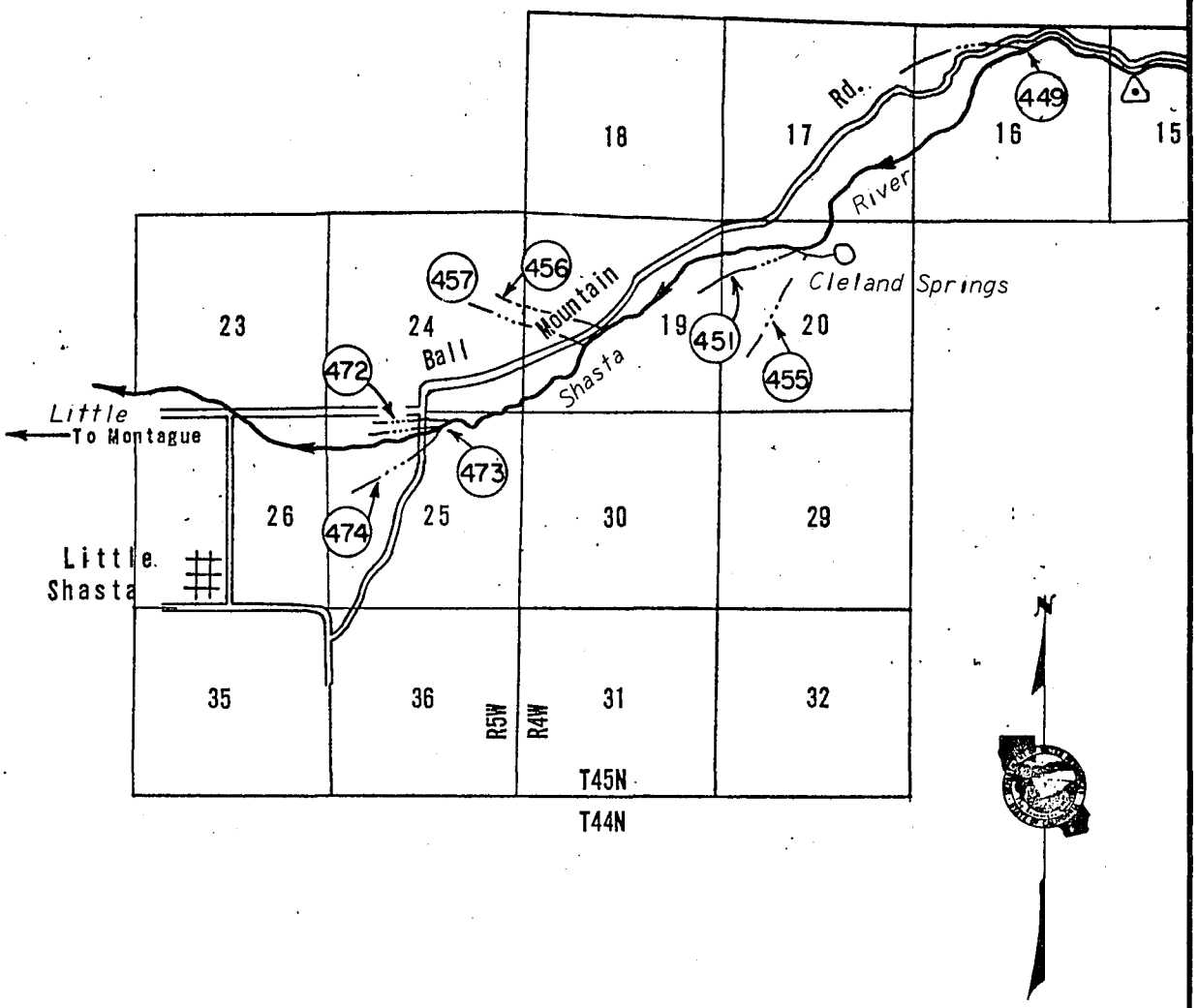
Diversion Number	Owner	CFS
239	Valentine Pump	7.50
240	Big Springs	30
241-242	E. Louie ditch	10.0

T43N ; R5W

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
BIG SPRINGS LAKE
SHASTA RIVER
WATERMASTER SERVICE AREA

Scale
0 2000 4000

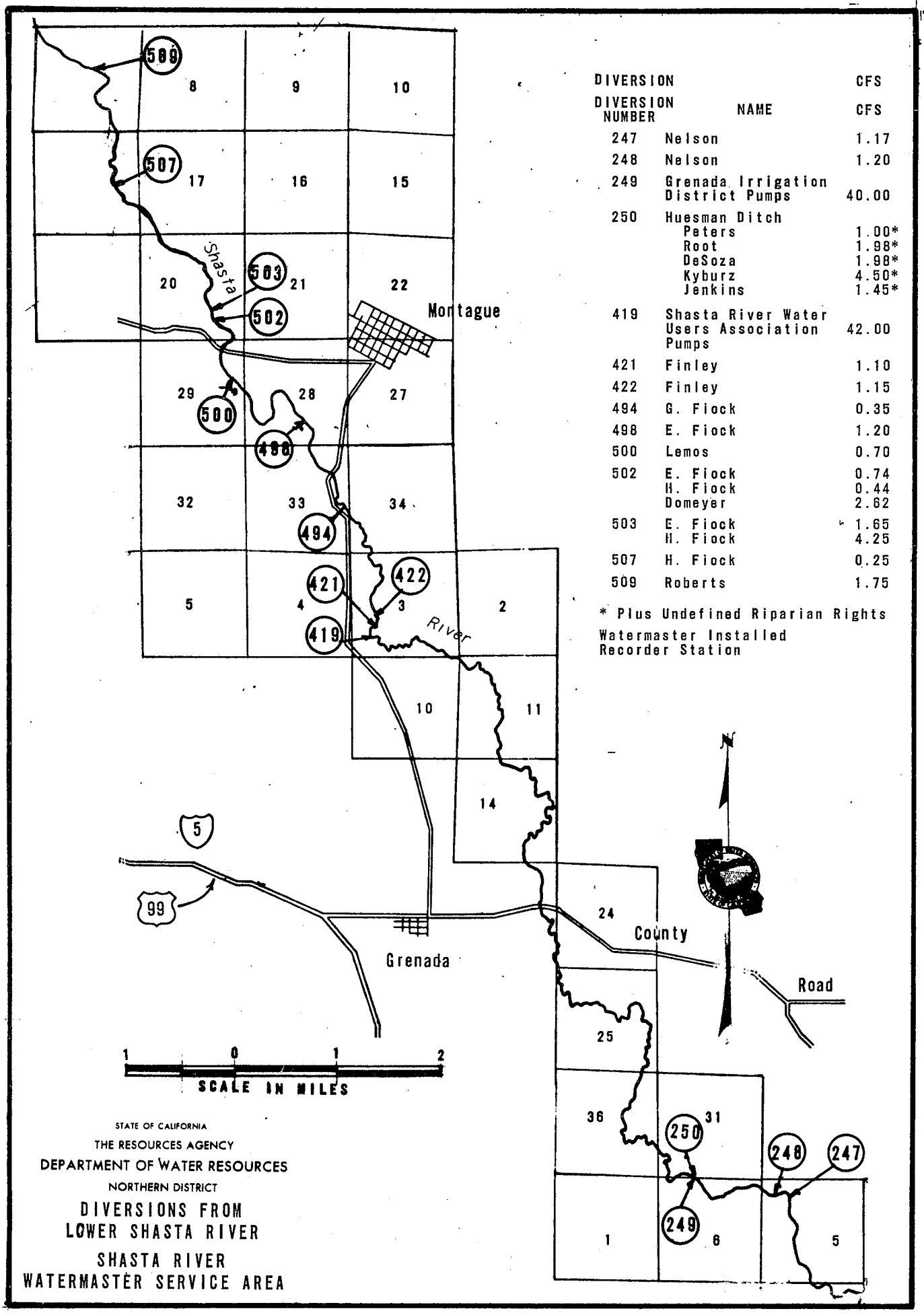


DIVERSION NUMBER	NAME	CFS
449	Harp Ditch	0.80
451	Terwilliger Ditch	1.12
455	Martin Ditch	90.00
456	Dimmick Ditch	0.12
457	S & T Ditch	6.60
472	M & L Ditch	19.60
473	BMS Ditch	7.19
474	HHP Ditch	15.000

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
LITTLE SHASTA RIVER
SHASTA RIVER
WATERMASTER SERVICE AREA

Scale
0 1/2 1



DIVERSION NUMBER	NAME	DIVERSION CFS
247	Nelson	1.17
248	Nelson	1.20
249	Grenada Irrigation District Pumps	40.00
250	Huesman Ditch	
	Peters	1.00*
	Root	1.98*
	DeSoza	1.98*
	Kyburz	4.50*
	Jenkins	1.45*
419	Shasta River Water Users Association Pumps	42.00
421	Finley	1.10
422	Finley	1.15
494	G. Flock	0.35
498	E. Flock	1.20
500	Lemos	0.70
502	E. Flock	0.74
	H. Flock	0.44
	Domeyer	2.62
503	E. Flock	1.65
	H. Flock	4.25
507	H. Flock	0.25
509	Roberts	1.75

* Plus Undefined Riparian Rights

Watermaster Installed Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
LOWER SHASTA RIVER

SHASTA RIVER
WATERMASTER SERVICE AREA

South Fork Pit River Watermaster Service Area

The South Fork Pit River service area is located primarily in southeastern Modoc County, with a small portion extending into northeastern Lassen County. Figures 17 through 17d, pages 134 through 138, show the South Fork and its tributaries, with roads, etc.

The major source of water for this service area is the South Fork Pit River and its tributaries which rise on the western slopes of the Warner Mountains. The river flows in a westerly direction, entering South Fork Valley near Likely. It then flows north through the valley to its confluence with the North Fork Pit River just south of Alturas. The South Fork Pit River is joined from the east by Fitzhugh Creek near the middle of the valley and by Pine Creek near Alturas.

The major area of water use is in South Fork Valley between Likely and Alturas. South Fork Valley is about 16 miles long and 3 miles wide, with the valley floor lying at an elevation of about 4,500 feet. The valley is bounded on both sides by a rocky plateau that separates it from the surrounding mountains.

Basis of Service

Water rights on the South Fork Pit River and its other tributaries, except Pine Creek, were defined by Court Reference No. 3273, dated October 30, 1934, and the watermaster service area was created on December 12 the same year.

The Pine Creek agreement established water rights on Pine Creek November 22, 1933, and this stream system was added to the South Fork Pit River area on January 12, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. This reservoir, now a recreation site, has a small water right but is not in the service area.

The South Fork Pit River decree and the Pine Creek agreement establish two priorities on the respective systems. There are 36 owners of decreed water rights in the service area with total allotments of 350.97 cubic feet per second.

A large reservoir, West Valley Reservoir, was built in 1937 to increase the supply and extend the season for irrigation in the South Fork Irrigation District. The water rights for use from West Valley Reservoir total 22,240 acre-feet.

Water Supply

The water supply for Pine Creek is derived mostly from snowmelt runoff. Therefore, runoff is usually small in the early spring, increases to a peak about May as temperatures rise, and then gradually decreases throughout the remainder of the season. Water users supplement their irrigation supplies from other sources whenever possible.

The water supply for Fitzhugh Creek consists of snowmelt runoff early in the season and supplemental water diverted from Mill Creek above Jess Valley later in the season. Surplus water from Fitzhugh Creek is diverted into the Payne and French Reservoirs through Payne-French ditch (Diversion 136) until about June, when the diversion is closed to allow sufficient flow to supply downstream allotments. By July the creek has normally receded until only first priority allotments are available.

Payne ditch (Diversion 1) is opened to import water from Mill Creek to Fitzhugh Creek when the snow has melted enough to allow access. This imported water is rediverted from North Fork Fitzhugh Creek through the Bowman ditch to the Bowman ranch. Return flow from Bowman ranch to the creek is rediverted through Diversion 136 for stockwatering purposes in the Payne-French ditch.

The water supply for the South Fork Pit River is derived primarily from snowmelt runoff, supplemented by water released from West Valley Reservoir. A number of streams, which rise at high elevations, collect at the mouth of Jess Valley to form the South Fork Pit River. West Valley Reservoir is located on West Valley Creek which enters the river below Jess Valley.

Most of the water users on the South Fork Pit River, except those in Jess Valley, are in the South Fork Irrigation District. The district stores water in West Valley Reservoir, which has a capacity of 22,240 acre-feet, and releases it to the South Fork Pit River as a supplemental supply when the natural flow becomes insufficient to meet demands. This usually occurs during the middle of June. Reservoir releases, together with the natural flow, are distributed by the watermaster in cooperation with the board of directors of the irrigation district. Except for extremely dry years, natural flow, combined with stored water, is sufficient to supply all demands for water on the South Fork Pit River throughout the irrigation season.

Records of the daily mean discharge of the several stream gaging stations in the area are presented in Tables 40 through 43, pages 132 and 133.

Method of Distribution

Irrigation of the lands along tributary streams is accomplished by flooding through use of small lateral ditches. The water is distributed on a continuous-flow basis to each user through gravity-flow diversion systems. In some cases, rotation is practiced among several users.

Most irrigation in the South Fork Pit River area is by the check and border method. The lands receive water essentially on demand by supplementing natural flow with releases from West Valley Reservoir. However, irrigation must be coordinated between the various ranches to eliminate large peak demands from the reservoir and to use the return flow as much as possible. Actual distribution varies each year as there is no specific irrigation schedule in use.

Distribution to the South Fork Pit River users is carried out on an equal and correlative basis in accordance with the water requirements for each ranch. This method of operation was made possible by construction of West Valley Reservoir in 1937.

1972 Distribution

Watermaster service began April 10 in the South Fork Pit River service area and continued until September 30, with John A. Nolan, Water Resources Technician II, as watermaster.

The water supply for the 1972 irrigation season was about average. Cold weather and an average snowpack delayed high runoff until late spring. However, the extremely hot, dry summer caused flows in the smaller tributaries to decrease rapidly. Consequently, only an average supply of water was available in these streams during late summer.

Pine Creek. Due to cold weather and the resulting low runoff, very close regulation was required during April and early May. Flow increased to over 100 percent of all allotments by late May and remained fairly steady throughout June. As the flow decreased in the latter part of the season, those water users with more than one ditch followed their usual practice of rotating their allotments between their various ditches. Flow had decreased to approximately 50 percent of first priority allotments by the end of the season.

Fitzhugh Creek. Regulation began in late June when the Yankee Jim and Bowman ditches became accessible. At that time surplus water was still available. The Payne ditch from Mill Creek was opened July 2. This imported water was added to the Bowman ditch allotment in accordance with the

decree. At the end of the season the available water supply had decreased to approximately 50 percent of first priority allotments.

South Fork Pit River. West Valley Reservoir reached its capacity of 22,240 acre-feet some time in March, but the natural flow of the South Fork Pit River was sufficient to meet all demands until July 1. Releases from the reservoir began at that time and continued throughout the season. At the end of September, 7,900 acre-feet remained in storage.

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 40

SOUTH FORK PIT RIVER NEAR LIKELY

Day	March	April	May	June	July	August	September	Day
1	63	189	223	330	98	155	105	1
2	153	242	245	319	109	152	125	2
3	141	238	260	313	103	157	146	3
4	114	242	272	300	89	157	150	4
5	92	265	290	286	70	163	135	5
6	82	242	313	278	67	174	106	6
7	121	230	324	291	63	174	82	7
8	173	219	319	311	61	167	62	8
9	205	211	313	300	58	184	58	9
10	232	205	308	272	61	205	56	10
11	242	195	306	238	56	205	63	11
12	256	191	313	213	56	201	70	12
13	269	199	327	189	58	197	67	13
14	276	223	353	178	54	195	58	14
15	276	272	371	178	69	205	49	15
16	286	274	383	167	102	221	48	16
17	296	232	386	157	117	221	48	17
18	306	199	374	145	114	215	47	18
19	298	184	347	137	114	211	48	19
20	286	176	356	133	114	213	41	20
21	283	176	344	124	119	217	27	21
22	288	182	311	111	117	217	26	22
23	272	191	293	105	114	215	23	23
24	258	193	288	105	111	215	26	24
25	258	182	286	95	106	213	27	25
26	238	174	283	94	106	195	40	26
27	223	186	288	88	116	133	76	27
28	215	217	300	84	133	113	63	28
29	203	221	311	82	130	109	47	29
30	193	211	316	76	143	106	41	30
31	189		324		164	103		31
Mean	219	212	314	190	96.5	161	65.3	Mean
Runoff In Acre-Feet	13460	12620	19290	11300	5930	11120	3890	Runoff In Acre-Feet

TABLE 41

WEST VALLEY CREEK BELOW WEST VALLEY RESERVOIR

Day	March	April	May	June	July	August	September	Day
1			66	24	18#	128	84	1
2			64	23	35	123	98	2
3			63	22	34	123	114	3
4			58	20	34	123	114	4
5			54	20	26	132	88	5
6			52	21	18	140	62	6
7			48	25	18	140	41	7
8			45	27	18	140	30	8
9			42	26	18	149	30	9
10			41	23	18	156	30	10
11		88*	41	21	18	156	30	11
12		90	41	20	18	156	30	12
13		90	41	19	18	156	30	13
14		92	38	18	18	156	22	14
15		108	37	18	26	162	22	15
16		118	36	16	58	168	22	16
17		106	33	15	84	168	22	17
18		94	31	14	84	168	22	18
19		88	32	12	84	168	22	19
20		85	35	11	84	167	14	20
21		84	36	10	84	167	6.2	21
22		80	35	9.9	84	166	6.2	22
23		78	34	9.0	84	166	6.2	23
24		72	34	8.8	84	166	6.2	24
25		71	33	8.0	84	166	6.0##	25
26		69	32	7.7	84	156		26
27		74	31	7.6	92	104		27
28		71	30	8.0	108	84		28
29		69	29	7.4	108	84		29
30		67	28	7.2	118	84		30
31			27		128	84		31
Mean		84.7	40.2	16.0	57.6	142.1	38.3	Mean
Runoff In Acre-Feet		3360	2473	949	3544	8739	1900	Runoff In Acre-Feet

* Beginning of Record
\# Beginning of Releases
\## End of Releases

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 42

FITZHUGH CREEK BELOW DIVERSION NO. 137

Day	March	April	May	June	July	August	September	Day
1				22*	7.8	2.7	1.5	1
2				23	7.3	2.6	1.5	2
3				24	6.9	2.5	1.5	3
4				25	6.7	2.5	1.5	4
5				26	6.5	2.4	1.5	5
6				28	6.2	2.4	1.5	6
7				30	5.8	2.4	1.5	7
8				29	5.6	2.4	1.5	8
9				28	5.3	2.4	1.4	9
10				28	4.9	2.4	1.4	10
11				27	4.7	2.3	1.3	11
12				27	4.6	2.3	1.3	12
13				27	4.5	2.3	1.3	13
14				26	4.4	2.1	1.2	14
15				24	4.4	2.0	1.1	15
16				21	4.2	2.0	1.0	16
17				20	4.1	2.0	1.0	17
18				18	3.9	1.9	1.0	18
19				17	3.7	1.8	1.0	19
20				15	3.5	1.8	1.0	20
21				14	3.4	1.7	0.9	21
22				12	3.3	1.7	0.9	22
23				11	3.2	1.7	0.8	23
24				10	3.1	1.7	0.8	24
25				9.6	3.0	1.6	0.8**	25
26				9.3	3.0	1.6		26
27				8.9	3.0	1.7		27
28				8.7	2.8	1.7		28
29				8.3	2.9	1.6		29
30				8.0	2.8	1.6		30
31					2.7	1.6		31
Mean				19.5	4.5	2.0	1.2	Mean
Runoff In Acre-Feet				1160	274	126	60	Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 43

PINE CREEK NEAR ALTURAS

Day	March	April	May	June	July	August	September	Day
1	26	29	34	125	42	21	16	1
2	74	35	36	125	42	21	16	2
3	52	34	38	113	41	20	16	3
4	41	35	41	104	40	20	17	4
5	35	39	44	97	39	20	17	5
6	31	40	47	95	38	20	16	6
7	29	39	47	109	36	20	16	7
8	29	36	48	102	35	19	16	8
9	30	34	50	98	34	19	16	9
10	31	33	53	93	33	19	16	10
11	32	33	55	86	32	18	16	11
12	33	32	57	77	32	18	16	12
13	34	33	60	69	32	18	16	13
14	34	35	64	63	31	18	16	14
15	34	40	68	57	30	18	15	15
16	35	34	77	54	29	18	15	16
17	37	31	84	54	28	18	15	17
18	39	29	79	55	27	18	15	18
19	38	29	79	57	26	18	15	19
20	36	28	83	57	26	18	15	20
21	36	28	72	56	26	17	15	21
22	36	28	66	55	25	17	15	22
23	35	29	63	53	24	17	15	23
24	33	31	62	53	24	17	15	24
25	33	31	62	51	23	17	15	25
26	31	30	62	49	22	17	19	26
27	29	31	65	47	22	16	21	27
28	29	33	74	46	22	16	16	28
29	28	33	85	44	21	16	15	29
30	28	33	106	44	21	16	15	30
31	27		118		21	16		31
Mean	34.7	32.8	63.8	72.9	29.8	18.1	15.9	Mean
Runoff In Acre-Feet	2132	1954	3925	4340	1833	1113	946	Runoff In Acre-Feet

Figure 17

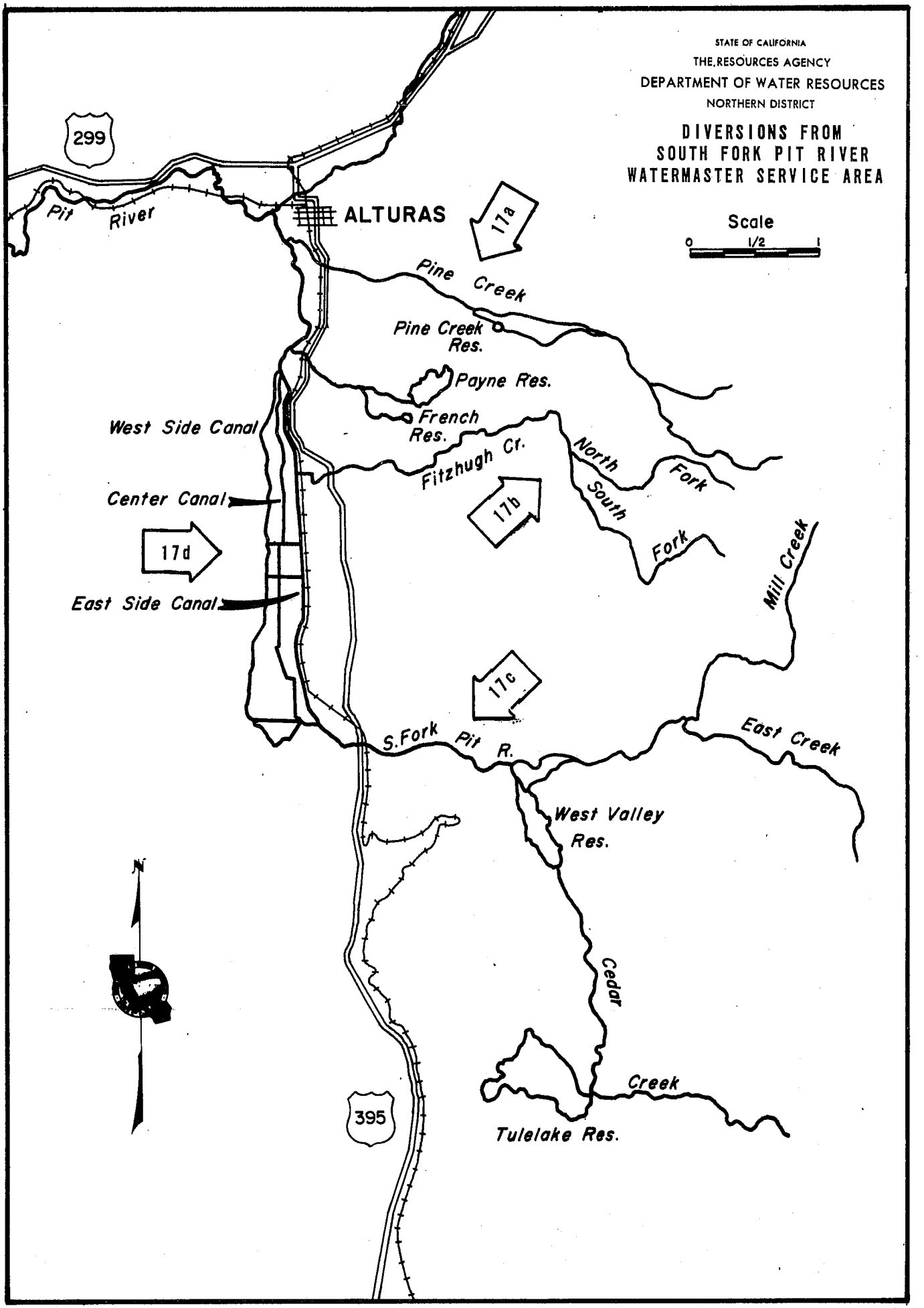
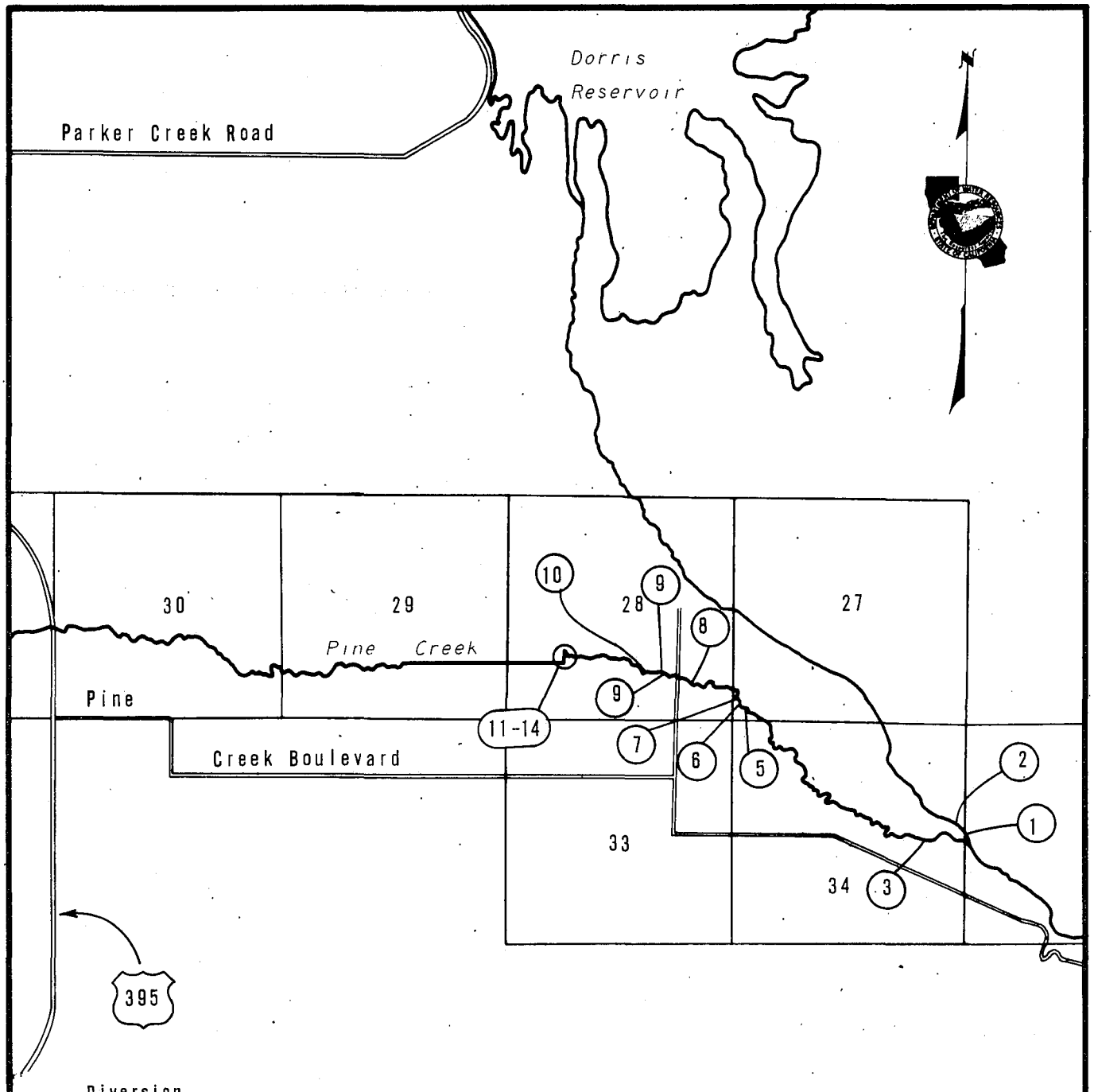

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0 1/2 1
299
Pit River
ALTURAS
17a
Pine Creek
Pine Creek Res.
Payne Res.
French Res.
West Side Canal
Fitzhugh Cr.
North Fork
South Fork
17b
Center Canal
17d
East Side Canal
Mill Creek
17c
S. Fork Pit R.
East Creek
West Valley Res.
N
Cedar Creek
395
Tulelake Res.

Figure 17a



Diversion Number		
1	Rice	3.00
	Stevens	3.35
	Wall	0.10
	Fish & Wildlife	0.70 plus surplus (Note 2)
	Quinn	0.70
	Sullivan	0.70
	Ebbe	0.70
2,3,6, 7,8,9	Rice	4.85
5	Weber Bros.	8.17
	Younger	4.42
	Swanson	1.37
10		3.6
11-14	Swanson	3.04

Note: Pine Creek
1. Channel cap. below No. 5 is about 20 cfs.
2. Surplus Pine Creek flow is diverted into Dorris Reservoir

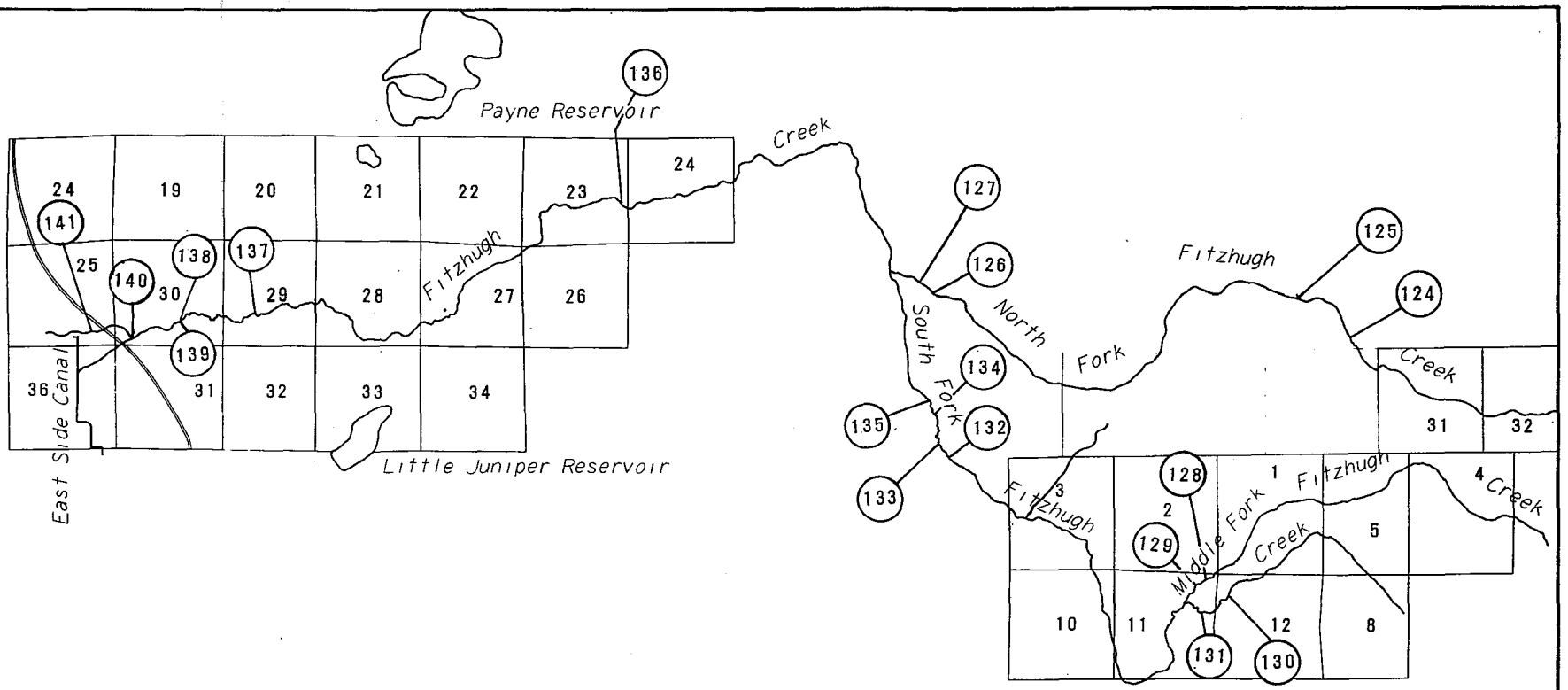
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM PINE CREEK

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale

0 ½ 1



Diversion Number	Owner	CFS	
1	Jobe	2.34	
124	Jobe	0.60	plus imported water from Mill Creek
125	Yankee Jim Ranch	1.60	
126,127	Weber Bros.	0.50	
128-131	Cantrall	1.20	
132-135	Weber Bros., Swanson	0.70	
136	Massae		Surplus water plus water from Bowman Drain due to imported
137-141	Bell	5.00	water from Mill Creek.
142	Pit River Ranch	5.40	

Scale 0 1 2

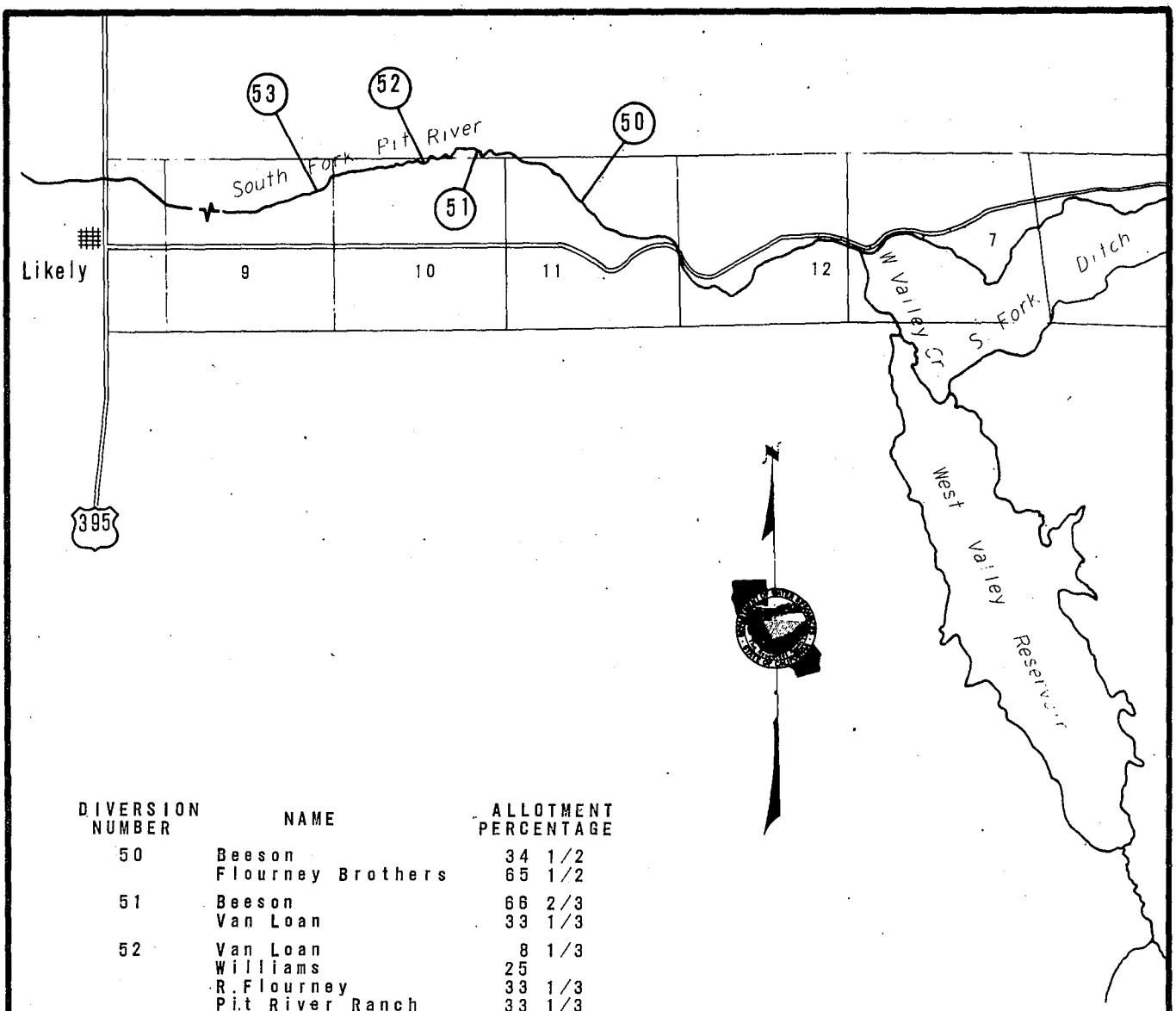
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM FITZHUGH CREEK

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

Figure 17b

Figure 17c



DIVERSION NUMBER	NAME	ALLOTMENT PERCENTAGE
50	Beeson	34 1/2
	Flourney Brothers	65 1/2
51	Beeson	66 2/3
	Van Loan	33 1/3
52	Van Loan	8 1/3
	Williams	25
	R.Flourney	33 1/3
	Pit River Ranch	33 1/3
53	W. Flourney	33 1/3
	K. Van Loan	66 2/3

NOTE: West Valley Reservoir maximum storage 22,240 acre-feet.

Stored water is released to supplement natural flow of South Fork Pit River. This makes decree allotments relatively unimportant.

Above percentages refer only to available water supply in respective ditches.

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

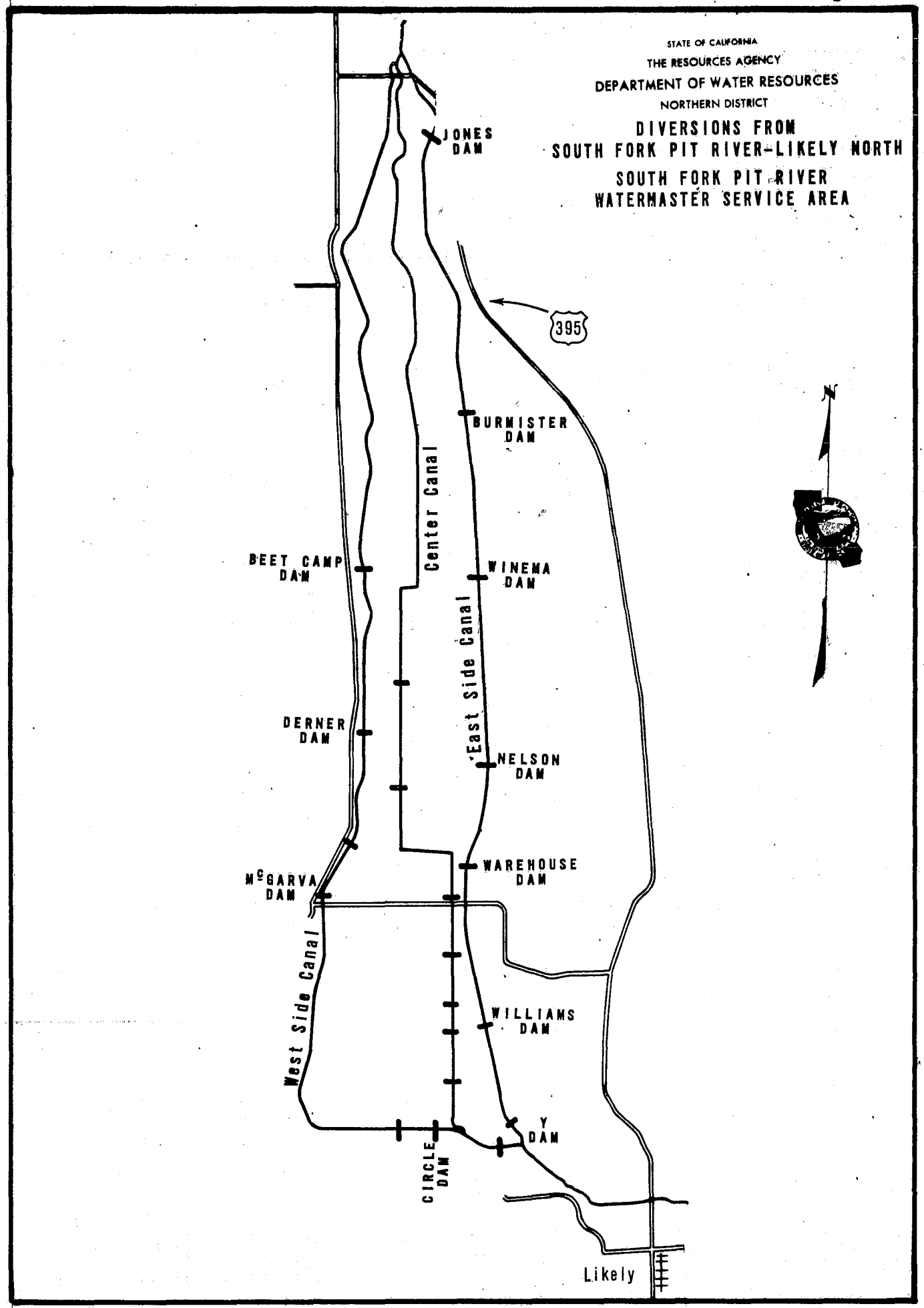
DIVERSIONS FROM SOUTH FORK PIT RIVER–LIKELY EAST

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale

0 ½ 1

Figure 17d


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SOUTH FORK PIT RIVER-LIKELY NORTH
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA
JONES DAM
395
BURMISTER DAM
Center Canal
BEET CAMP DAM
WINEMA DAM
East Side Canal
DERNER DAM
NELSON DAM
McGARVA DAM
WAREHOUSE DAM
West Side Canal
WILLIAMS DAM
Y DAM
CIRCLE DAM
Likely

Surprise Valley Watermaster Service Area

The Surprise Valley service area is situated in extreme eastern Modoc County, east of the Warner Mountains. Figure 18, page 149, shows the service area, the streams serving it, and the towns and roads of the valley.

Ten individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These streams are fed by snowmelt runoff and traverse a fast, precipitous course down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939, including Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, all of which previously had watermaster service individually. Service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960. Each of the 10 stream systems are under separate decrees. There are 171 owners of decreed water rights in the service area with their rights totaling 313.75 cubic feet per second. See Table 44, page 140, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply is derived almost entirely from snowmelt runoff, with only minor spring-fed flows occurring in the latter part of the season. Due to the steep eastern slope of the Warner Mountains, there are no known economically justified storage sites on the service area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. An extreme diurnal temperature variation causes extensive variation in snowmelt runoff. This problem is further aggravated by the relatively short, steep drainage area. In addition, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes are apt to cause considerable damage in the form of washouts and debris deposition and are of such short duration that no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 45 through 55, pages 143 through 148.

Method of Distribution

The continuous-flow method of distribution is employed on most creeks; however, in a few instances the available water supply is rotated among the users in accordance with either decree schedules or by mutual agreement.

Alfalfa and meadow hay, the major crops grown in the valley, are irrigated in most instances by wild flooding, although some lands depend upon subsurface irrigation. Also, sprinkler irrigation with surface water is a recent trend. A few of these systems work by gravity, but most employ pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under state watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been stressed during recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do provide

TABLE 44

DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS

Creek	Modoc County Superior Court Decree No.	Date	Type[a/]	Service Area Created	No. of Water Right Owners	Total Cubic Feet Per Second	Remarks
Bidwell	6420	1-13-60	S	3-16-60[b/]	46	63.74	(Schedule 3) 3 priorities March 15-July 19 (Schedule 4) 5 priorities July 10-Sept. 30 If no water passing Div. No. 23 Sept.-30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	1 priority on Brown Cr., tributary to Rutherford Cr., 7 priorities on Rutherford Cr., tributo Mill Cr., 4 priorities on Mill Cr., 1st & 2nd for year-round use, 3rd & 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4[c/]	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Approp. License 1566, 1613, 1648, and 1850.
Pine	3391	12- 7-36	CR	1-13-37	5 1[c/]	d/ 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs, then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 d/	5-22-01 2-15-23	CA CA	9-11-29	12	28.90[d/]	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st & 2nd priorities; No. 2443 3rd priority & agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Cr. on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Owl	2410	5-29-29	CA	9-11-29	8 1[c/]	41.70	21 priorities; all year-round but 8th, under which each of 3 owners receives his allotment for an 8-day period. Approp. License No. 2842, 0.54 cfs.
Rader	3626	6- 4-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6 & 7 have seasonal limitations.
Eagle	2304 3284	4- 5-26 11- 5-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, & established 4 classes. 4.50 cfs right of Betford Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

a/ S-Statutory, CR-Court Reference, CA-Court Adjudication

b/ Added to existing Surprise Valley service area.

c/ Appropriative rights junior to the decreed rights.

d/ See remarks.

significant assistance in solving water measurement and distribution problems. The individual streams and locations of the diversions are shown on Figures 18a through 18j, pages 150 through 159.

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the district's diversion and distribution project was completed in February, 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and more equitable. The users say that they receive twice as much water as they did before the project. It is possible to divert and distribute 80 cubic feet per second in the lower seven ditches.

1972 Distribution

Watermaster service began in the Surprise Valley service area on March 19 and continued until September 27. William E. Gill, Water Resources Technician II, was watermaster during this period.

The 1972 irrigation season was very successful due to an above-normal snowpack in the Warner Mountains, although lack of precipitation and dry north winds caused streams to recede rapidly during June and July and flows to remain low for the rest of the season.

Greater than average per acre crop yields were experienced throughout the valley, especially by ranchers who supplemented their irrigation by ground water pumping. However, ranches bordering the Alkali Lakes experienced below-normal overall crop yields due to portions of their lands being flooded by the unusually high level of the lakes. (The Division of Highways raised the grade approximately 2 feet on the causeway across Middle Alkali Lake to keep the highway in service.)

Bidwell Creek. Total stream runoff available to Bidwell Creek users during the period April 1 through September 30 was 19,500 acre-feet, or approximately 170 percent of normal. Charles Holmes, watermaster for the North Fork Pit River, served as watermaster on Bidwell Creek from April 1 through July 9. On July 10, flow was adequate to supply approximately 50 percent of the third priorities; however, by August 19 only first priority water was available.

Mill Creek. Total stream runoff available to Mill Creek users during the period April 1 through September 27 was 4,620 acre-feet or approximately 89 percent of normal. During the month of April and the first half of May, third priority water was available in varying amounts. All four priorities were satisfied from mid-May through June 20. The flow receded rapidly thereafter and from August 22 to September 30 only partial first priority water was available.

Soldier Creek. Total stream runoff available to Soldier Creek users from March 19 through September 27 was 5,080 acre-feet or approximately 135 percent of normal. Due to above-normal runoff and below-normal requirements of lower users, the flow was adequate to supply both upper and lower users until early June. When the "Season Outside of the General Irrigation Season" started June 19, the flow was adequate to supply approximately two-thirds of the seventh priority. From mid-August through September 27 only partial first priority was available.

Pine Creek. Total stream runoff available to Pine Creek users during the period March 20 through September 27 was 1,750 acre-feet or approximately 130 percent of normal. Some bulldozer and backhoe work was required to clean the channel above the Parshall flumes and to clean the north Parshall flume. This work was complete April 1. By mutual agreement of the users the flow was split, one-half in each channel, and remained so until May 27. At this time, again by mutual agreement, the total flow of 4.6 cubic

feet per second was turned into the south channel for the Cal-Vada ranch. On June 13 the flow receded to 1.6 cubic feet per second and was all diverted into the Cressler ditch for the Bordwell ranch. On July 11 the water failed to reach the place of use. Pine Creek was dry for the remainder of the season.

Cedar Creek. Total stream runoff available to Cedar Creek users from April 1 through September 30 was 5,788 acre-feet or approximately 223 percent of normal. Streamflow was adequate to supply demand during April. However, by the end of May only 50 percent of second priority water was available. After June 16 only first priority water was available in decreasing amounts.

Deep Creek. Total stream runoff available to Deep Creek users from April 1 to September 27 was 4,070 acre-feet or approximately 110 percent of normal. Except for about the last 10 days of April, flow in North Deep Creek was more than adequate to supply all of the decreed rights until June 12. (North Deep Creek has only one priority and one diversion). From June 12 on, flow receded steadily. Except for the latter part of April, flow in South Deep Creek was more than adequate to supply all five priorities until May 21. The streamflow receded steadily and after June 13 only first priority water was available in decreasing amounts.

Owl Creek. Total stream runoff available to Owl Creek users from April 1 through September 27 was 10,250 acre-feet or approximately 163 percent of normal. The streamflow was adequate to supply the demands during April. The flow increased steadily during May and from May 12 to July 1 was adequate to supply all 21 priorities. The maximum flow of 112 cubic feet per second was recorded on June 5, after which the flow receded steadily. Sufficient water was available after August 9, when the three "special" eighth priority rights ended, to supply a portion of the ninth priority through August 13.

Rader Creek. The Rader Creek water users experienced an above-normal irrigation season. Channel conditions were such that no suitable site could be found for a recorder. Streamflow was adequate to supply the demands. All of the first priority was still being supplied on September 5. The repairs of last year's damage to Diversion 2 were not completed by the end of the irrigation season. The structures for Diversions 3, 4, and 5 also needed to be replaced.

Eagle Creek. The Eagle Creek water users experienced an above-normal irrigation season. All four priorities were satisfied from mid-May through the first week in July. The flow receded steadily until by mid-September only first priority water was available.

Emerson Creek. Total stream runoff available to Emerson Creek users from April 1 through September 27 was 5,945 acre-feet or approximately 167 percent of normal. By May 2, melting snow had increased the flow in Emerson Creek to fully satisfy all four priorities and continued to do so until June 18. The flow receded steadily, however, and second priority water was available in varying amounts during August and September.

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 45

BIDWELL CREEK NEAR FORT BIDWELL

Day	March	April	May	June	July	August	September	Day
1	32	32	62	159	25	12	8.0	1
2	40	37	68	147	24	12	8.0	2
3	75	43	77	139	23	12	8.0	3
4	66	52	87	131	21	12	8.0	4
5	65	69	97	121	21	12	8.0	5
6	66	68	117	118	21	12	8.0	6
7	65	60	118	122	20	12	7.7	7
8	57	53	104	120	19	11	7.7	8
9	59	48	88	111	19	11	7.6	9
10	61	44	81	100	18	11	7.4	10
11	65	41	82	91	18	11	7.5	11
12	69	39	87	80	17	11	7.7	12
13	81	37	101	73	17	11	7.7	13
14	81	35	122	68	16	10	7.5	14
15	74	36	137	66	16	9.7	6.8	15
16	79	39	146	66	15	9.6	6.8	16
17	91	38	139	64	15	9.6	6.8	17
18	103	35	123	61	14	9.6	6.4	18
19	87	34	112	54	14	9.6	6.3	19
20	74	34	107	50	14	9.6	6.1	20
21	69	39	97	47	14	9.6	6.1	21
22	64	43	91	42	14	9.3	6.0	22
23	55	47	87	39	14	9.3	5.8	23
24	47	50	87	38	13	9.3	5.8	24
25	44	47	90	35	13	9.1	5.6	25
26	38	47	94	33	13	8.8	5.9	26
27	34	52	100	31	13	8.6	7.4	27
28	31	66	110	29	13	8.3	7.7	28
29	30	69	127	28	12	8.3	7.7	29
30	29	63	147	27	12	8.3	7.3	30
31	30		161		12	8.0		31
Mean	60.0	46.6	105	76.3	16.5	10.2	7.1	Mean
Runoff In Acre-Feet	3691	2771	6438	4542	1012	624	423	Runoff In Acre-Feet

TABLE 46

MILL CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1			11	54	14	3.8	1.5	1
2			14	53	13	3.5	1.5	2
3			18	52	12	3.3	1.5	3
4			19	49	11	3.3	1.5	4
5			20	48	11	3.0	1.5	5
6			24	46	11	3.0	1.5	6
7			24	51	10	3.0	1.5	7
8			20	48	9.1	3.0	1.5	8
9			18	45	8.6	3.0	1.5	9
10		15*	18	42	8.1	3.0	1.5	10
11		12	19	37	7.6	2.8	1.5	11
12		11	20	34	7.1	2.6	1.5	12
13		8.1	22	32	7.1	2.6	1.5	13
14		6.7	25	32	7.1	2.6	1.5	14
15		6.3	28	31	6.7	2.6	1.6	15
16		7.1	32	31	6.3	2.6	1.9	16
17		5.1	33	30	6.3	2.6	1.9	17
18		4.1	28	29	6.3	2.5	1.8	18
19		3.5	26	29	5.9	2.5	1.8	19
20		3.5	25	27	5.9	2.5	1.8	20
21		3.5	22	26	5.5	2.5	1.8	21
22		4.1	21	25	5.1	1.9	1.8	22
23		4.8	22	24	4.8	1.6	1.8	23
24		5.1	22	22	4.8	1.6	1.8	24
25		4.1	23	20	4.5	1.6	1.8	25
26		3.8	23	19	4.5	1.6	4.8	26
27		8.1	25	18	4.1	1.6	6.3**	27
28		12	31	17	4.1	1.5		28
29		11	35	15	3.8	1.5		29
30		10	42	15	3.8	1.5		30
31			52		3.8	1.5		31
Mean		7.1	24.5	33.3	7.2	2.5	1.9	Mean
Runoff In Acre-Feet		295	1510	1990	442	151	102	Runoff In Acre-Feet

* Beginning of Record
** End of Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 47

SOLDIER CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		15	25E	34	5.4	2.5	1.7	1
2		28	30E	29	5.2	2.5	1.7	2
3		25	35E	28	5.0	2.5	1.7	3
4		32	40E	25	4.8	2.4	1.7	4
5		39	50	23	4.6	2.4	1.7	5
6		31	49	22	4.4	2.3	1.7	6
7		22	38	20E	4.4	2.3	1.7	7
8		22	32	19E	4.1	2.2	1.7	8
9		20	29	18E	4.0	2.2	1.7	9
10		18	30E	17E	4.0	2.2	1.7	10
11		17	30E	16E	3.8	2.2	1.7	11
12		15	35E	15E	3.7	2.2	1.7	12
13		14	35E	14E	3.6	2.2	1.7	13
14		14	35E	13E	3.6	2.1	1.7	14
15		15	40E	12	3.6	2.1	1.7	15
16		18	40E	12	3.6	2.1	1.7	16
17		16	45E	12	3.4	2.1	1.7	17
18		13	40E	11	3.3	2.1	1.7	18
19	24*	13	40E	11	3.3	2.1	1.7	19
20	24	15	35E	10	3.3	2.0	1.7	20
21	23	16	35E	9.8	3.3	2.0	1.7	21
22	23	18	30E	9.0	3.1	2.0	1.7	22
23	21	19	30E	8.6	3.1	1.9	1.6	23
24	20	19	30E	7.9	3.1	1.9	1.6	24
25	18	16	29	7.3	3.0	1.9	1.6	25
26	15	16	30	6.7	2.9	1.8	9.0	26
27	13	24	32	6.1	2.9	1.8	17 **	27
28	12	29	35	5.8	2.8	1.7		28
29	10	23	39	5.8	2.7	1.7		29
30	11	21E	37	5.6	2.7	1.7		30
31	12		39		2.6	1.7		31
Mean	17.3	20.1	35.4	14.1	3.7	2.1	2.5	Mean
Runoff In Acre-Feet	448	1200E	2179E	840E	225	124	135	Runoff In Acre-Feet

* Beginning of Record
** End of Record
E Estimated

TABLE 48

PINE CREEK AT DIVISION OF NORTH AND SOUTH CHANNELS

Day	March	April	May	June	July	August	September	Day
1		13	11	3.3	0.3			1
2		24	13	3.0	0.3			2
3		23	13	3.1	0.3			3
4		27	13	2.9	0.2			4
5		30	13	2.6	0.2			5
6		25	15	2.5	0.2			6
7		22	12	4.5	0.2			7
8		19	11	4.0	0.1			8
9		14	10	2.7	0.1			9
10		13	9.6	2.3	0.1			10
11		13	9.4	2.1	0.0**			11
12		12	9.6	1.8				12
13		12	10	1.6				13
14		9.6	10	1.5				14
15		12	10	1.5				15
16		15	9.6	1.4				16
17		12	7.8	1.4				17
18		9.6	6.0	1.3				18
19		8.6	5.8	1.2				19
20	17*	10	6.8	1.1				20
21	17	11	5.8	1.0				21
22	14	11	5.0	0.9				22
23	8.0	12	5.0	0.8				23
24	12	11	5.8	0.7				24
25	11	9.4	5.0	0.6				25
26	9.5	10	4.6	0.5				26
27	8.9	13	4.6	0.5				27
28	8.3	14	4.3	0.4				28
29	8.3	11	4.5	0.4				29
30	7.9	10	4.0	0.3				30
31	8.5		3.7					31
Mean	10.9	14.5	8.3	1.7	0.2			Mean
Runoff In Acre-Feet	259	865	512	103	4			Runoff In Acre-Feet

* Beginning of Record
** End of Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 49

CEDAR CREEK NEAR CEDARVILLE

Day	March	April	May	June	July	August	September	Day
1	59	22	18	17	1.7	0.6	0.3	1
2	67	34	18	16	1.7	0.6	0.3	2
3	81	30	19	16	1.5	0.6	0.3	3
4	66	32	19	15	1.4	0.6	0.4	4
5	53	34	19	15	1.3	0.6	0.5	5
6	48	33	21	16	1.3	0.5	0.5	6
7	48	30	20	17	1.2	0.5	0.5	7
8	47	27	19	15	1.1	0.5	0.4	8
9	46	25	18	13	1.1	0.5	0.4	9
10	47	23	18	12	1.1	0.5	0.4	10
11	46	23	18	11	1.1	0.5	0.4	11
12	47	22	18	8.6	1.1	0.4	0.5	12
13	46	22	18	7.6	1.0	0.4	0.5	13
14	43	23	18	7.1	0.9	0.4	0.5	14
15	44	27	18	6.6	0.9	0.4	0.4	15
16	48	32	18	6.1	0.9	0.4	0.4	16
17	48	27	18	5.5	0.9	0.5	0.4	17
18	45	23	18	5.0	0.8	0.5	0.4	18
19	42	22	17	4.7	0.8	0.5	0.4	19
20	40	21	18	4.3	0.8	0.5	0.4	20
21	39	21	17	4.1	0.8	0.5	0.4	21
22	39	20	17	3.8	0.8	0.4	0.4	22
23	36	20	16	3.6	0.8	0.4	0.4	23
24	35	20	16	3.4	0.7	0.4	0.4	24
25	32	20	16	3.1	0.7	0.4	0.4	25
26	27	19	16	2.7	0.7	0.4	0.8	26
27	24	19	17	2.5	0.8	0.3	3.9	27
28	22	19	17	2.3	0.7	0.3	2.3	28
29	21	19	17	2.0	0.6	0.3	1.2	29
30	21	19	17	1.7	0.6	0.3	0.9	30
31	21		17		0.6	0.3		31
Mean	42.8	24.3	17.8	8.3	1.0	0.5	0.7	Mean
Runoff In Acre-Feet	2634	1444	1093	491	60	28	38	Runoff In Acre-Feet

TABLE 50

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		10E*	8.8	13	2.3	1.1	0.6	1
2		10E	9.7	12	2.2	1.0	0.6	2
3		10E	11	12	2.0	1.0	0.6	3
4		11	13	11	1.9	1.0	0.6	4
5		12	13	11	1.8	0.9	0.6	5
6		12	14	11	1.8	0.9	0.6	6
7		11	13	12	1.7	0.9	0.6	7
8		10	12	12	1.7	0.9	0.6	8
9		9.9	11	11	1.5	0.8	0.6	9
10		9.3	11	9.9	1.5	0.8	0.6	10
11		9.3	11	9.3	1.4	0.8	0.6	11
12		8.6	11	8.6	1.4	0.8	0.5	12
13		8.2	12	8.1	1.3	0.8	0.5	13
14		9.3	13	6.6	1.3	0.7	0.5	14
15		11	14	6.5	1.3	0.7	0.5	15
16		11	14	6.3	1.2	0.7	0.5	16
17		10	14	6.3	1.2	0.7	0.5	17
18		9.3	12	6.2	1.2	0.7	0.5	18
19		9.3	11	5.6	1.1	0.7	0.5	19
20		8.8	11	5.2	1.1	0.7	0.5	20
21		8.6	10	5.0	1.1	0.7	0.5	21
22		8.4	9.9	4.7	1.1	0.7	0.5	22
23		8.2	9.7	4.3	1.1	0.7	0.5	23
24		8.4	9.7	4.0	1.0	0.7	0.5	24
25		8.2	9.9	3.7	1.0	0.6	0.5	25
26		7.9	9.9	3.5	1.0	0.6	1.8	26
27		8.1	10	3.4	1.0	0.6	2.0**	27
28		8.6	11	3.1	1.0	0.6		28
29		8.6	12	2.8	1.0	0.6		29
30		8.4	12	2.5	1.1	0.6		30
31			12		1.1	0.6		31
Mean		9.4	11.5	7.4	1.4	0.8	0.6	Mean
Runoff In Acre-Feet		562E	705	438	84	47	34	Runoff In Acre-Feet

* Beginning of Record
** End of Record
E Estimated

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 51

SOUTH DEEP CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		20E*	7.3	14	1.3	0.7	0.5	1
2		20E	8.8	13	1.2	0.6	0.5	2
3		20E	11	12	0.9	0.6	0.5	3
4		24	13	10	1.4	0.6	0.5	4
5		26	16	9.2	1.4	0.6	0.5	5
6		25	17	8.1	1.4	0.6	0.6	6
7		22	19	14	1.5	0.6	0.6	7
8		21	19	11	1.4	0.6	0.6	8
9		21	17	9.6	1.4	0.6	0.6	9
10		19	17	8.8	1.3	0.6	0.6	10
11		17	18	7.3	1.2	0.6	0.6	11
12		16	19	6.4	1.2	0.6	0.6	12
13		15	20	5.8	1.0	0.6	0.6	13
14		16	21	4.9	1.0	0.6	0.6	14
15		19	21	4.4	0.9	0.6	0.6	15
16		18	22	4.1	0.9	0.6	0.6	16
17		12	21	3.7	0.9	0.6	0.6	17
18		11	19	3.5	0.9	0.6	0.6	18
19		9.2	18	3.3	0.8	0.6	0.6	19
20		6.4	16	3.1	0.9	0.6	0.6	20
21		5.8	13	2.9	0.9	0.6	0.6	21
22		5.8	11	2.7	0.9	0.6	0.6	22
23		6.1	11	2.7	0.8	0.6	0.6	23
24		6.4	11	2.7	0.8	0.6	0.6	24
25		6.1	11	2.5	0.8	0.5	0.6	25
26		5.8	12	2.1	0.7	0.5	1.2	26
27		6.4	12	1.8	0.7	0.5	2.1**	27
28		7.7	12	1.7	0.7	0.5		28
29		7.7	12	1.5	0.7	0.5		29
30		7.3	13	1.4	0.7	0.5		30
31			14		0.7	0.5		31
Mean		14.1	15.2	6.0	1.0	0.6	0.7	Mean
Runoff In Acre-Feet		838E	936	353	62	36	35	Runoff In Acre-Feet

* Beginning of Record
** End of Record
E Estimated

TABLE 52

OWL CREEK BELOW ALLEN-ARRECHE DITCH

Day	March	April	May	June	July	August	September	Day
1			21	92	38	5.9	2.5	1
2			28	92	35	5.8	2.5	2
3		35*	34	90	32	5.5	2.3	3
4		28	36	107	28	5.3	2.4	4
5		31	33	112	26	5.2	3.2	5
6		28	48	105	25	5.0	3.1	6
7		17	42	97	23	4.5	2.6	7
8		12	37	89	21	4.2	2.5	8
9		10**	33	81	19	4.4	2.5	9
10			35	77	18	4.8	2.5	10
11			38	72	16	4.3	2.6	11
12			44	68	16	3.9	2.6	12
13			53	62	15	3.7	2.5	13
14			62	67	15	3.6	2.4	14
15			75	90	14	3.6	2.4	15
16			61	100	13	3.6	2.3	16
17			55	93	13	3.6	2.2	17
18			44	87	12	3.5	2.2	18
19			42	78	12	3.5	2.2	19
20			45	74	11	3.5	2.3	20
21			35	84	10	3.2	2.2	21
22			31	77	9.5	3.2	2.3	22
23			34	63	8.7	3.2	2.2	23
24			38	47	8.1	3.0	2.2	24
25			43	43	7.9	3.0	2.3	25
26			55	40	7.7	2.9	5.8	26
27			66	40	7.3	2.9	36 **	27
28			75	42	6.9	2.9		28
29		19*	103	42	6.5	2.9		29
30		18	101	41	6.5	2.9		30
31			108		6.3	2.6		31
Mean		22.0	50.1	75.0	15.7	3.9	3.8	Mean
Runoff In Acre-Feet		393	3084	4470	967	238	204	Runoff In Acre-Feet

* Beginning of Record
** End of Record

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 53

RADER CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15	NO RECORD AVAILABLE FOR 1972 SEASON							15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Mean								Mean
Runoff In Acre-Feet								Runoff In Acre-Feet

TABLE 54

EAGLE CREEK AT EAGLEVILLE

Day	March	April	May	June	July	August	September	Day
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15	NO RECORD AVAILABLE FOR 1972 SEASON							15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Mean								Mean
Runoff In Acre-Feet								Runoff In Acre-Feet

SURPRISE VALLEY WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

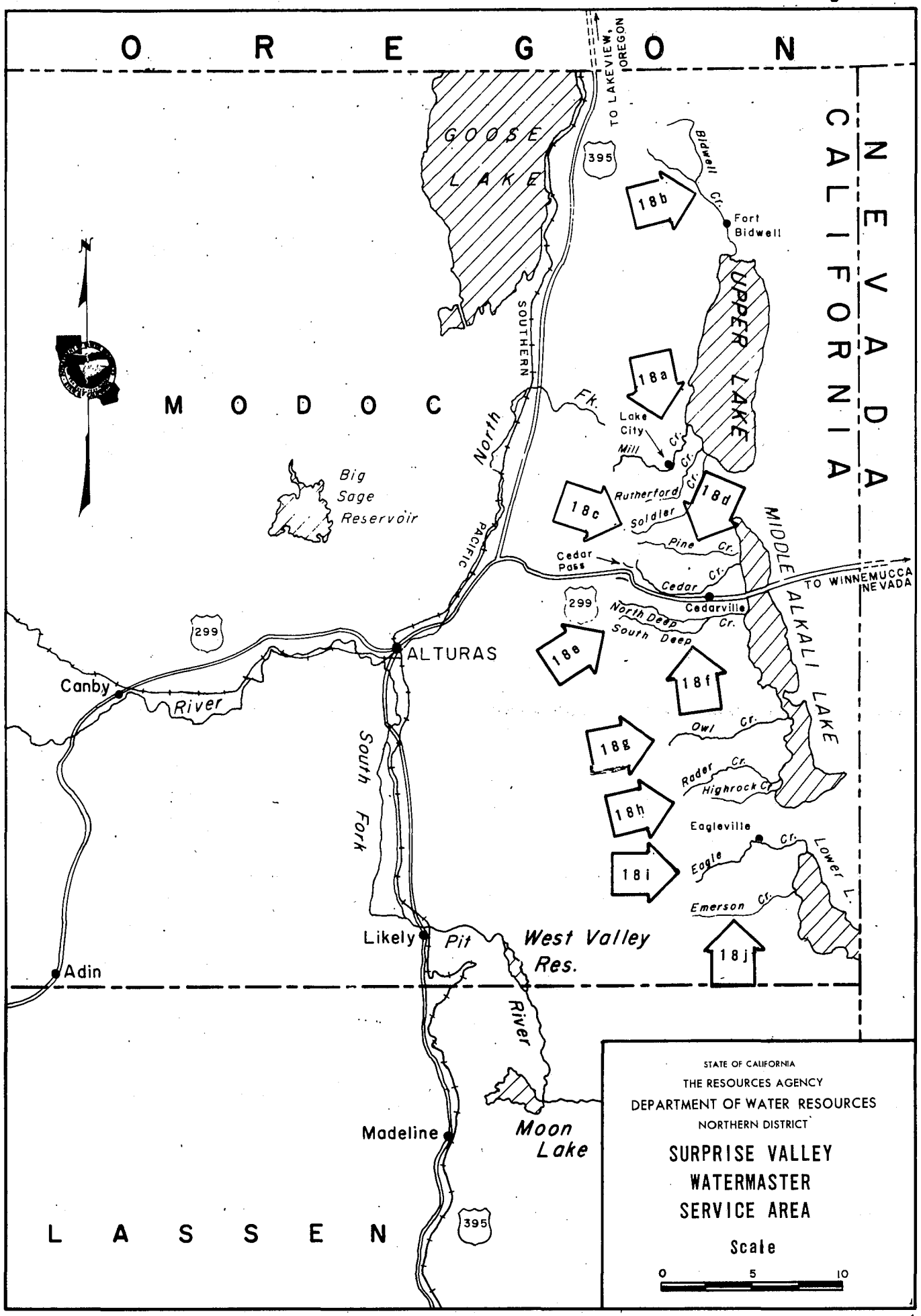
TABLE 55

EMERSON CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		20*	24	43	11	6.0	4.4	1
2		19	25	41	11	6.0	4.4	2
3		20	27	41	10	5.6	4.1	3
4		22	29	38	9.3	5.6	4.4	4
5		24	30	38	9.3	5.2	4.8	5
6		23	31	38	9.3	4.8	4.4	6
7		22	31	39	9.3	4.8	4.1	7
8		22	30	38	8.7	4.8	3.8	8
9		23	29	35	8.7	4.8	3.8	9
10		24	29	34	8.7	4.8	4.1	10
11		24	30	32	8.7	4.8	4.1	11
12		24	31	32	8.1	4.4	4.1	12
13		23	31	31	8.1	4.4	4.1	13
14		23	32	30	7.5	4.4	4.1	14
15		24	34	27	7.5	4.4	4.1	15
16		24	35	27	7.0	4.4	4.1	16
17		23	34	25	7.0	4.8	4.2	17
18		23	34	24	7.0	4.8	4.2	18
19		23	33	24	7.0	4.4	4.4	19
20		23	30	22	6.5	4.4	4.4	20
21		23	28	21	6.5	4.4	4.3	21
22		23	27	20	6.5	4.4	4.4	22
23		23	27	19	6.5	4.4	4.4	23
24		23	31	18	6.5	4.4	4.5	24
25		23	34	16	6.5	4.4	4.6	25
26		22	35	15	6.0	4.4	5.0	26
27		23	37	14	6.0	4.1	5.0**	27
28		24	39	13	6.0	4.1		28
29		24	42	12	6.0	5.2		29
30		24	42	12	6.0	4.8		30
31			42		6.0	4.8		31
Mean		22.8	32.0	27.3	7.7	4.7	4.3	Mean
Runoff In Acre-Feet		1360	1970	1624	472	292	231	Runoff In Acre-Feet

* Beginning of Record
** End of Record

Figure 18


O R E G O N
TO LAKEVIEW, OREGON
GOOSE LAKE
395
Bidwell Cr.
Fort Bidwell
18b
NEVADA
CALIFORNIA
UPPER LAKE
SOUTHERN PACIFIC
Fk.
North
18a
Lake City
Mill Cr.
Cr.
Cr.
Rutherford Cr.
18d
18c
Soldier Cr.
Pine Cr.
MODOC
Big Sage Reservoir
MIDDLE ALKALI LAKE
Cedar Pass
Cedar Cr.
TO WINNEMUCCA NEVADA
299
Cedarville
North Deep Cr.
South Deep
18e
18f
ALTURAS
299
Canby
River
Owl Cr.
18g
Rader Cr.
Highrock Cr.
18h
Eagleville
Cr.
Eagle
Lower L.
18i
Emerson Cr.
South Fork
Likely
Pit
West Valley Res.
18j
Adin
River
Madeline
Moon Lake
395
L A S S E N
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
SURPRISE VALLEY
WATERMASTER
SERVICE AREA
Scale
0
5
10

DIVERSIONS FROM
MILL CREEK, BROWN CREEK AND RUTHERFORD(Releford) CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

DIVERSION NUMBER	NAME	CFS
2	C. Dixon	0.38
	H. Smith	0.24
3	N. Bettendorff	1.38
	N. McDaniels	0.13
	Domestic Users	0.08
4	J. Fogerty	0.30
	Mi Larson	0.26
5	C. Dixon	0.18
11,12,13,15,28	Town Users	1.92
17	N. Bettendorff	2.01
18	Town Users	0.33
20	V. Wimer	1.85
24	T. Dunton	1.45
26	E. Darst	1.85
29A,30 to 34	Town Users	1.62
Channel	Cockrells Inc.	10.30
Channel	G.W. Warrens	1.85
44,45 and 46	W. Gorzell	0.80
47	M. Toney	0.01
	W. Gorzell	0.575
	C. Gorzell	0.275
	N. Bettendorff	0.30
48	F. Hedgpeth	0.60
48 and 49	M. Toney	1.64
54	Cockrells Inc	0.40
55,56 and 57	Cockrells Inc.	0.75)*
58	Cockrells Inc.	0.10)*
58 and 59	W. Odbert	0.90)*
59A	Cockrells Inc	0.35)*
61	G.W. Warrens	0.65
62	S. Burger	1.65**
Channel of Rutherford Creek	Cockrells Inc.	0.70
		37.13

* Water derived from Hay Collecting Ditch to be deducted from Decreed amount of direct diversion from Rutherford Creek.

** Not under Water Master Service.

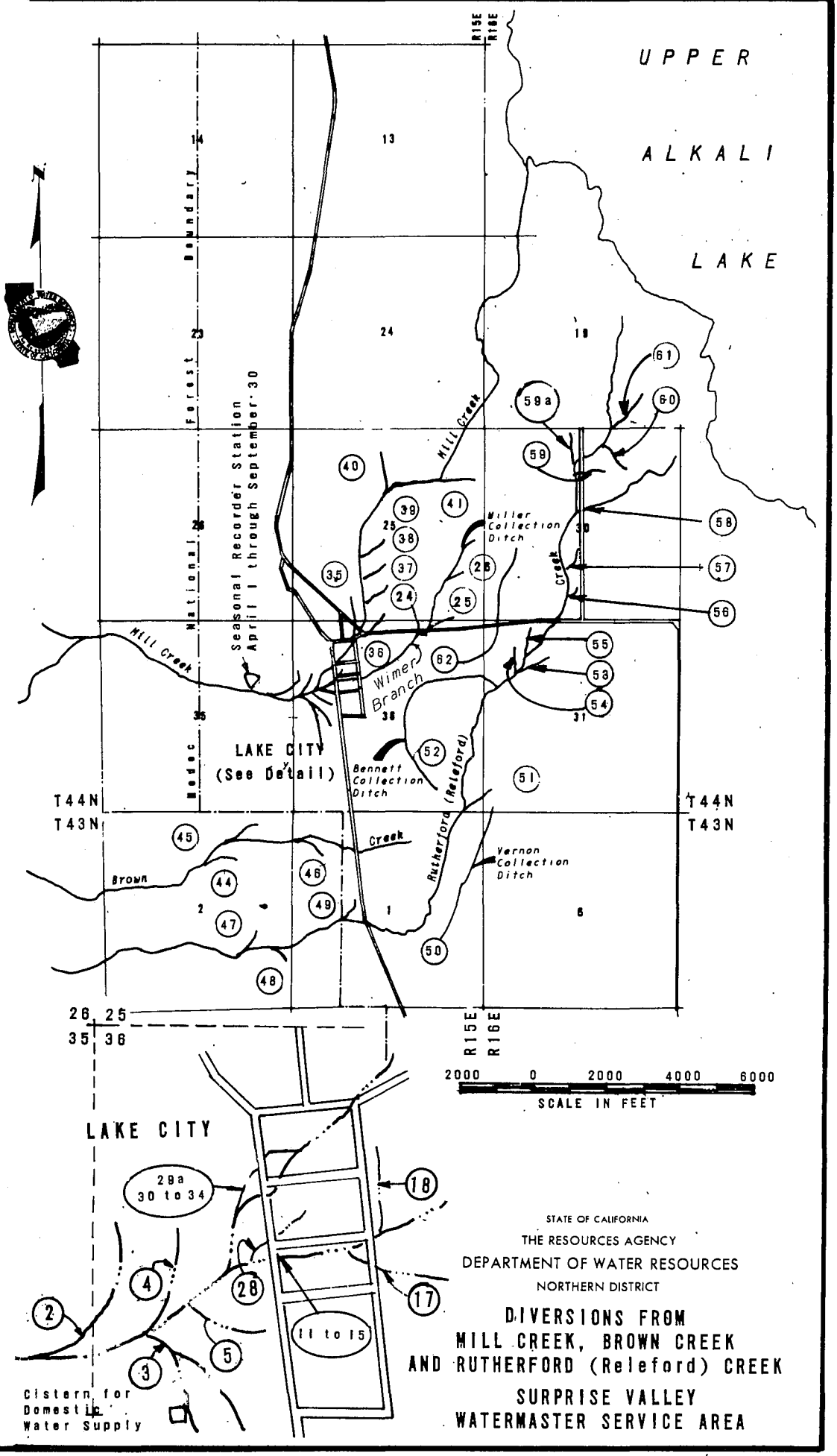
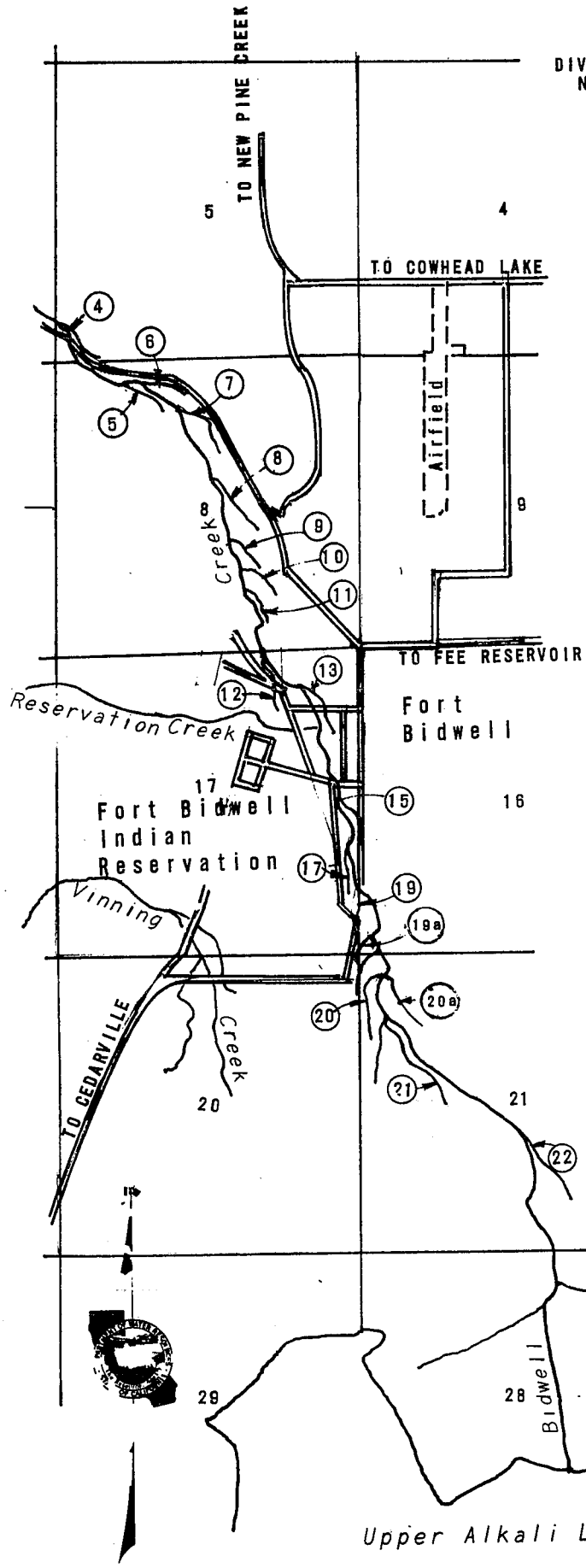

UPPER
ALKALI
LAKE
R15E
R16E
Boundary
National Forest
Seasonal Recorder Station
April 1 through September 30
Mill Creek
Miller Collection Ditch
Wimer Branch
LAKE CITY
(See Detail)
Bennett Collection Ditch
Rutherford (Releford) Creek
Vernon Collection Ditch
Brown Creek
T44N
T43N
26 25
35 36
2000 0 2000 4000 6000
SCALE IN FEET
LAKE CITY
29a
30 to 34
11 to 15
Cistern for Domestic Water Supply
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
MILL CREEK, BROWN CREEK
AND RUTHERFORD (Releford) CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Figure 18b



DIVERSION NUMBER	NAME	CFS March 15 to July 9	CFS July 10 to Sept 30
4	Fort Bidwell Cattle Production Company	4.71	4.71
5	G. Peterson	0.38	0.35
	C. Bucher	0.45	0.35
	E. Uhrig	0.07	0.07
6	E. Uhrig	0.18	0.18
7	G. Peterson	0.50	0.40**
8	Fort Bidwell Cattle Production Company	7.24	7.24
	Town Users	0.06	0.06
9	J. McAuliffe	7.63	7.63
	Town Users	0.22	0.17
10	Carey Brothers	6.13	6.13
	C. Bucher	0.66	0.70*
	P. Peterson	0.44	0.44
	Town Users	0.30	0.24
11	C. Bucher	0.38	**
12	U.S. Indian Service	0.46	0.20
	Town Users	0.26	0.26
13	Fort Bidwell Cattle Production Company	5.24	5.24
	Town Users	0.44	0.44
15	Fee Ranch Inc.	8.94	8.94
	L. Sagehorn	1.34	3.94*
	M. O'Callaghan	2.88	2.88*
	G. Toney	0.42	0.42*
	Town Users	0.03	0.03
17	E. Kober	0.05	0.05
19	R. Cole	4.26	4.26
20	L. Sagehorn	1.10	1.10
	Carey Brothers	0.95	0.95*
21	L. Sagehorn	1.39	1.39
	Carey Brothers	0.48	0.48
22	M. O'Callaghan	0.38	0.38
23	L. Sagehorn	1.79	1.79
X	L. Sagehorn	If flow is less than 3.82 cfs deficiency is made up by additional diversions through (15) if Fee Ranch allottment is satisfied.	

Reservation Creek-U.S. Indian Service Entire Flow.

NOTE: Diversions (1),(2) and (3) are not shown as they are not part of the Water Master Service Area.

* Includes 0.10 cfs stockwater right not to be diverted from creek.

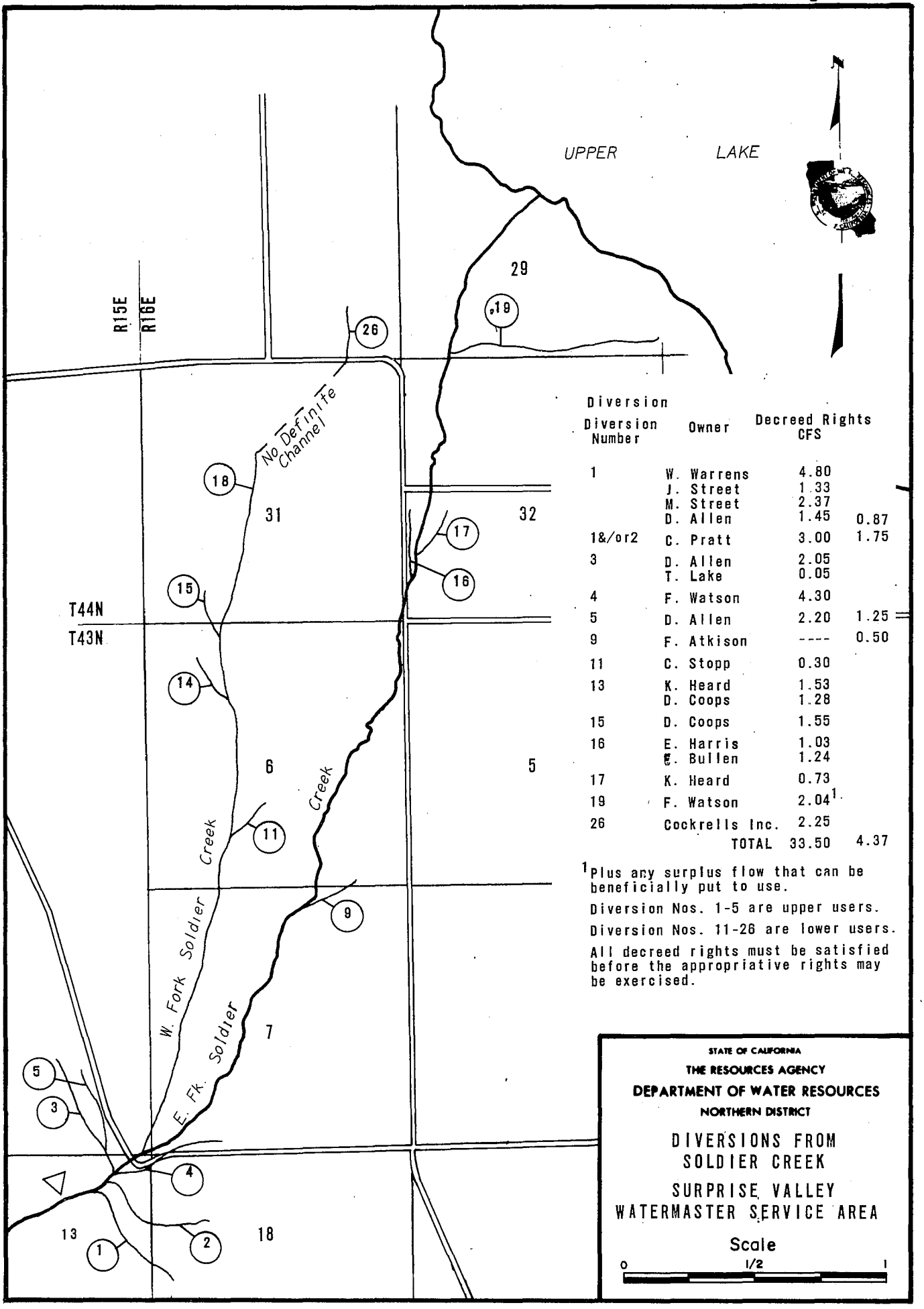
**Two 36 Hour periods of 2.00 cfs.

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM BIDWELL CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA

Figure 18c



Diversion Number	Owner	Decreed Rights CFS	
1	W. Warrens	4.80	
	J. Street	1.33	
	M. Street	2.37	
	D. Allen	1.45	0.87
1&/or2	C. Pratt	3.00	1.75
3	D. Allen	2.05	
	T. Lake	0.05	
4	F. Watson	4.30	
5	D. Allen	2.20	1.25
9	F. Atkison	----	0.50
11	C. Stopp	0.30	
13	K. Heard	1.53	
	D. Coops	1.28	
15	D. Coops	1.55	
16	E. Harris	1.03	
	E. Bullen	1.24	
17	K. Heard	0.73	
19	F. Watson	2.04[1]	
26	Cockrells Inc.	2.25	
	TOTAL	33.50	4.37

[1] Plus any surplus flow that can be beneficially put to use.

Diversion Nos. 1-5 are upper users.

Diversion Nos. 11-26 are lower users.

All decreed rights must be satisfied before the appropriative rights may be exercised.

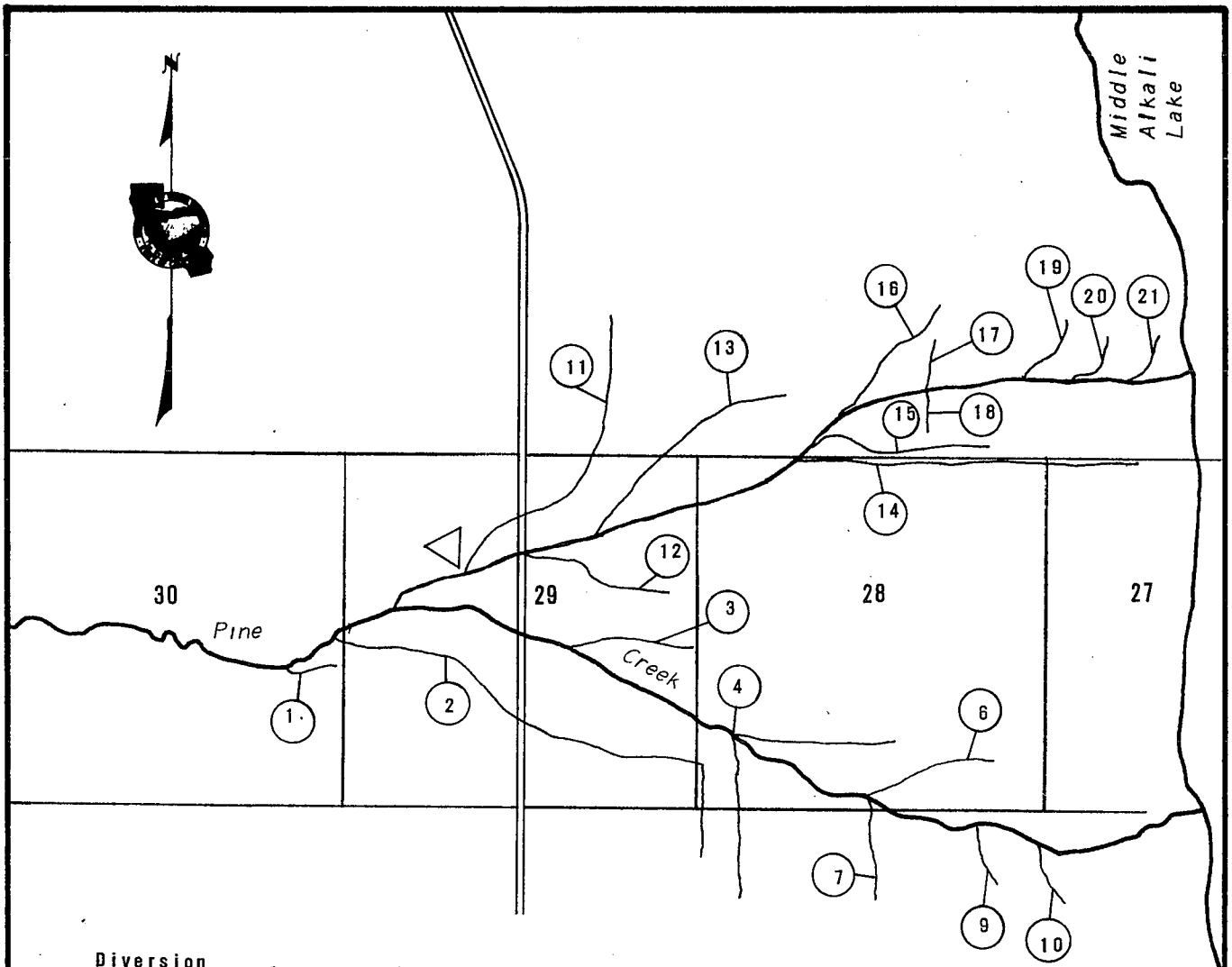
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SOLDIER CREEK

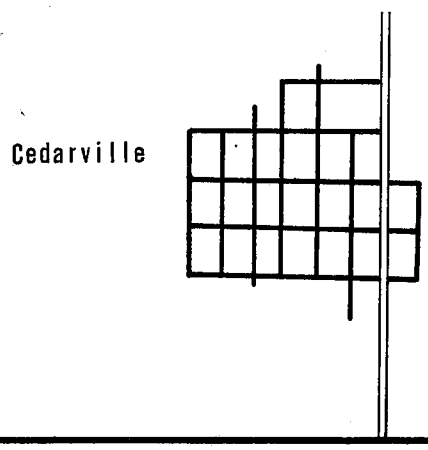
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale
0 1/2 1

Figure 18d



Diversion Number	Owner	CFS
1	Cal Vada Ranch	0.08 cfs
2	R. Bordwell	When flow is 1.6 cfs or less
17-21	Cal Vada Ranch	When flow= 1.6 cfs to 4.0 cfs When flow is greater than 4.0 cfs rotation as follows:
1; 11; 13-21	Cal Vada Ranch	345.5 Acre-feet
3; 14	C. Marx	60.0 Acre-feet
3; 6-10	C. Hill	206.6 Acre-feet
2; 4	R. Bordwell	78.4 Acre-feet
12	V. McCully	2.5 Acre-feet
TOTAL		693.0 Acre-feet (Total 1st & 2nd rotations)



T43N; R16E

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM PINE CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale
0 1/2 1

Figure 18e

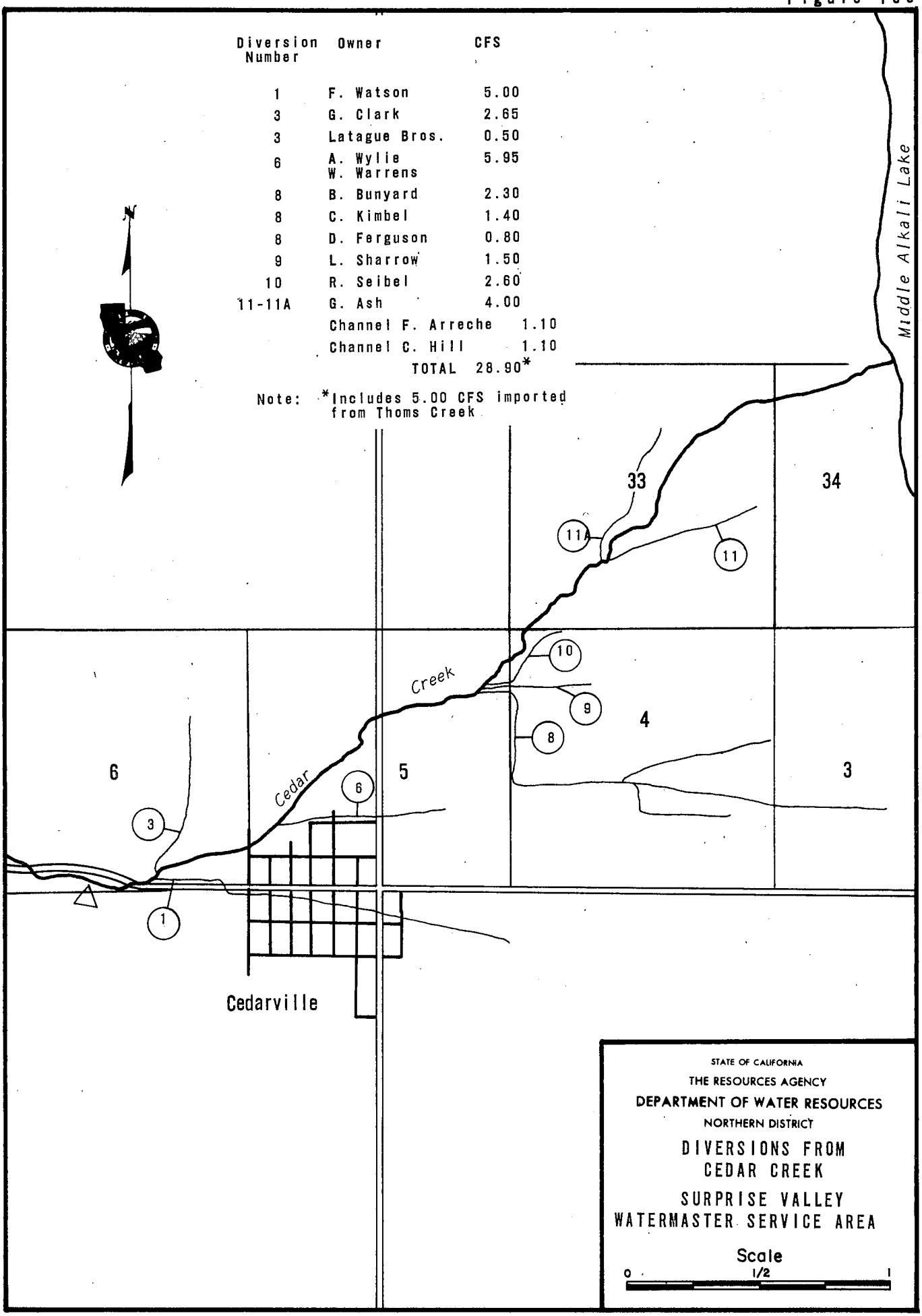

Diversion Number | Owner | CFS
1 | F. Watson | 5.00
3 | G. Clark | 2.65
3 | Latague Bros. | 0.50
6 | A. Wylie, W. Warrens | 5.95
8 | B. Bunyard | 2.30
8 | C. Kimbel | 1.40
8 | D. Ferguson | 0.80
9 | L. Sharrow | 1.50
10 | R. Seibel | 2.60
11-11A | G. Ash | 4.00
Channel | F. Arreche | 1.10
Channel | C. Hill | 1.10
TOTAL | | 28.90*
Note: *Includes 5.00 CFS imported from Thoms Creek
Middle Alkali Lake
33
34
11A
11
10
9
8
4
6
5
3
Cedar Creek
6
3
1
Cedarville
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM CEDAR CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA
Scale
0
1/2
1

Figure 18f

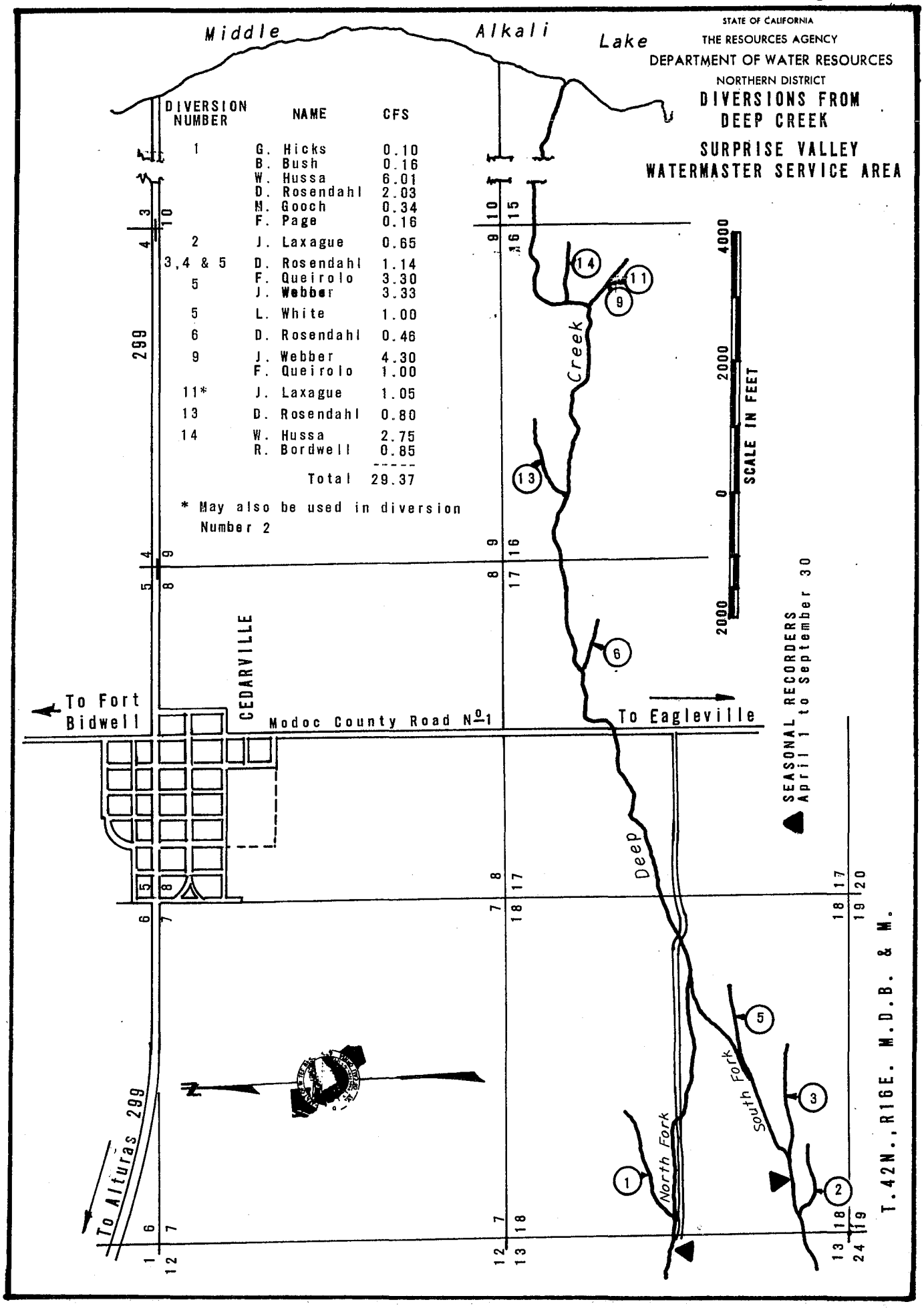
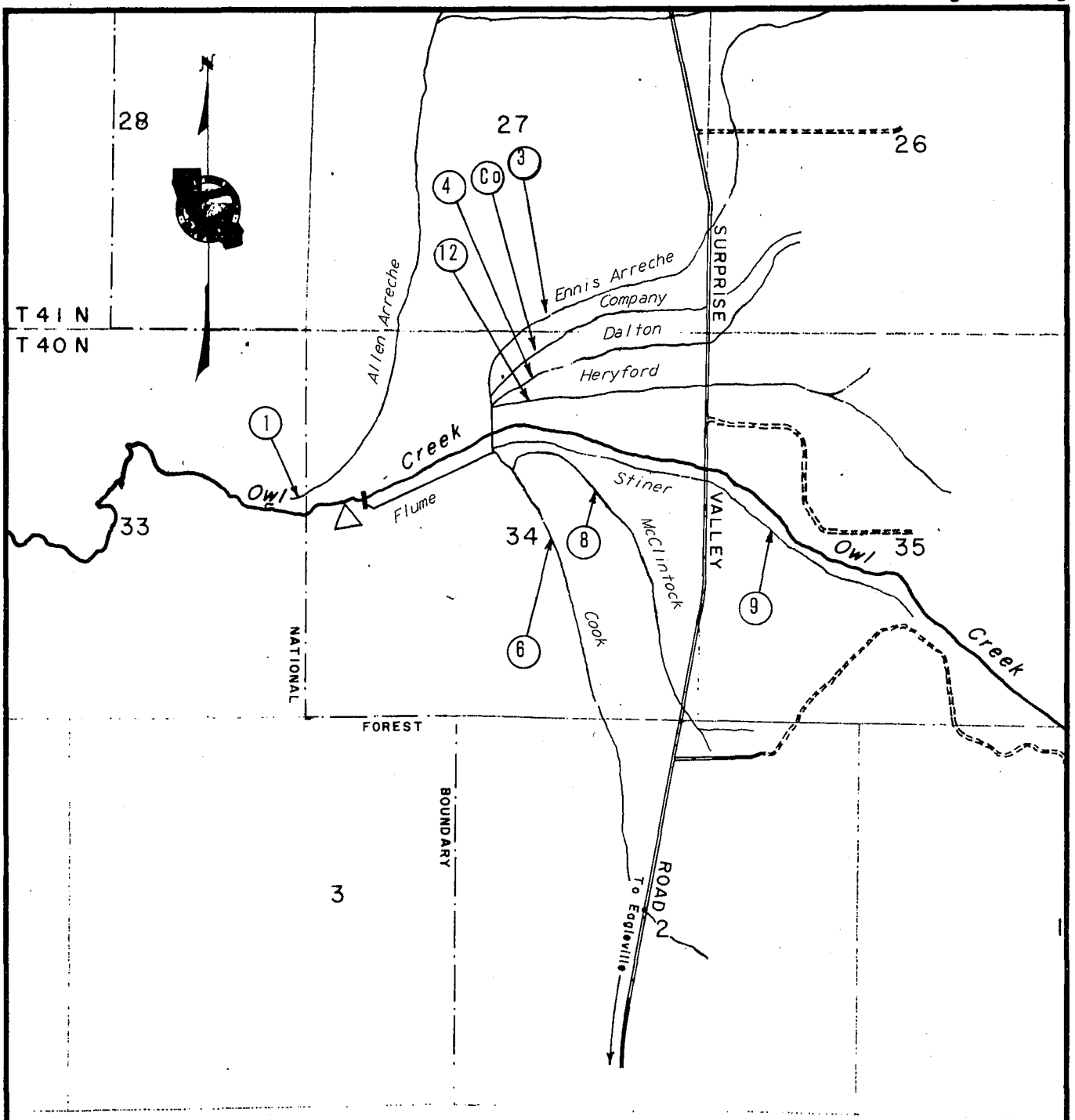

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM DEEP CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA
Middle Alkali Lake
DIVERSION NUMBER | NAME | CFS
1 | G. Hicks | 0.10
B. Bush | 0.16
W. Hussa | 6.01
D. Rosendahl | 2.03
M. Gooch | 0.34
F. Page | 0.16
2 | J. Laxague | 0.65
3,4 & 5 | D. Rosendahl | 1.14
F. Queirolo | 3.30
5 | J. Webber | 3.33
5 | L. White | 1.00
6 | D. Rosendahl | 0.46
9 | J. Webber | 4.30
F. Queirolo | 1.00
11* | J. Laxague | 1.05
13 | D. Rosendahl | 0.80
14 | W. Hussa | 2.75
R. Bordwell | 0.85
Total | 29.37
* May also be used in diversion Number 2
SCALE IN FEET
4000
2000
0
2000
SEASONAL RECORDERS
April 1 to September 30
CEDARVILLE
To Fort Bidwell
Modoc County Road No. 1
To Eagleville
To Alturas 299
299
Deep Creek
North Fork
South Fork
T.42N.,R16E. M.D.B. & M.

Figure 18g



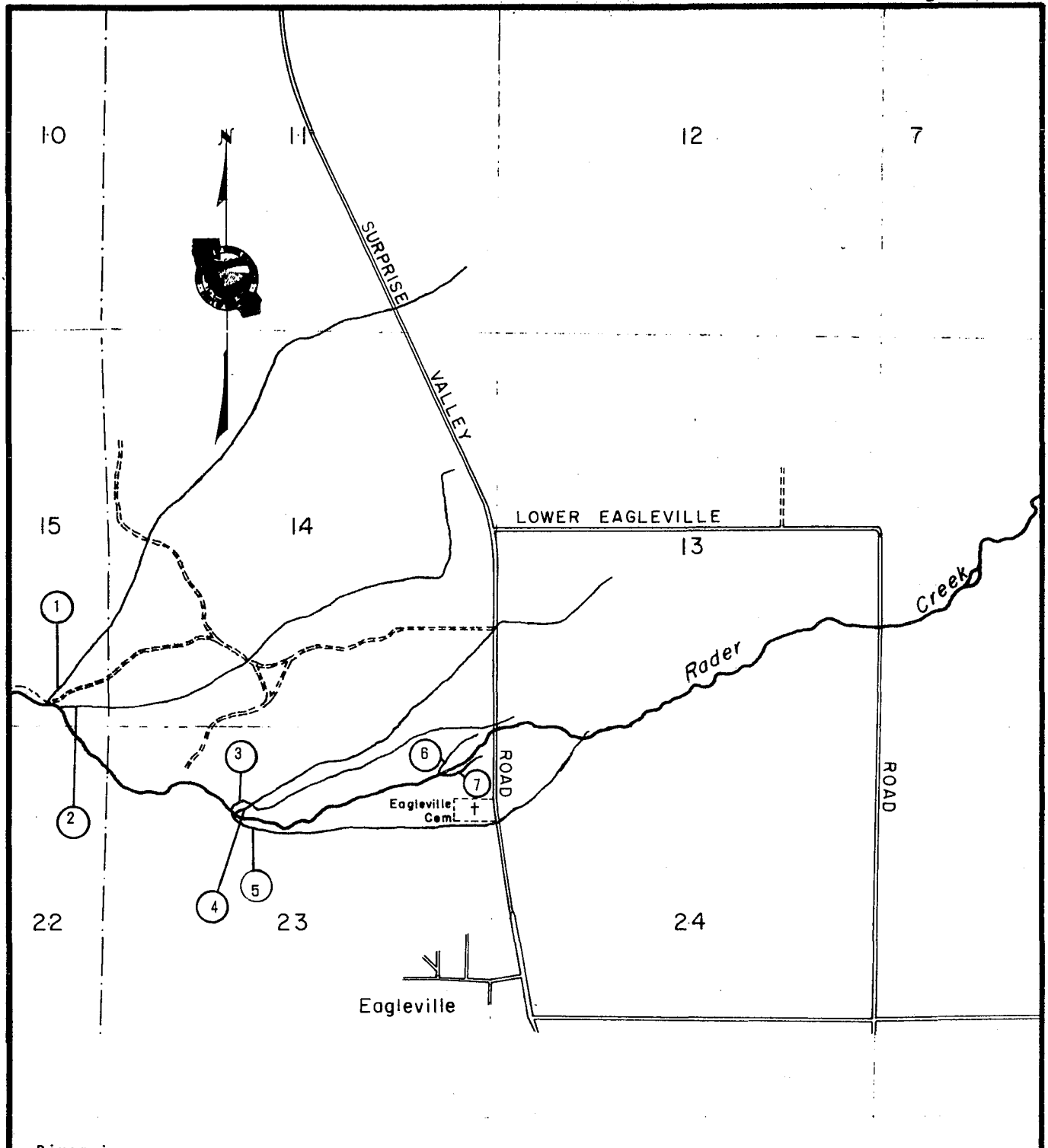
Diversion Number	Owner	CFS
1	W. Cockrell	2 47
	J. Stevenson	1 81
3	E. Davis	1 16
	J. Stevenson	2 25
4	E. Davis	3 14
5	S. Stevenson	1 26
	B. Radabaugh	1 81
	H. Stanley	0 99
6 & 8	Cockrell's Inc	17 62
9	E, Berryessa	3 17
12	E. Berryessa	.5 46
	Total	41 70 cfs

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
OWL CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000

Figure 18h



Diversion Number	Owner	CFS
1	L. Cockrell	1/7 of total flow from May 20, until water will not reach place of use. 3.00
2	Lazy S.J. Ranch Inc.	3.50
3	E. Minto	2.39
4	Betford Corp.	9.60
5	Betford Corp.	2.35
6	C. Minetti	0.08
7	R. Reeves	0.08
		Total 21.00

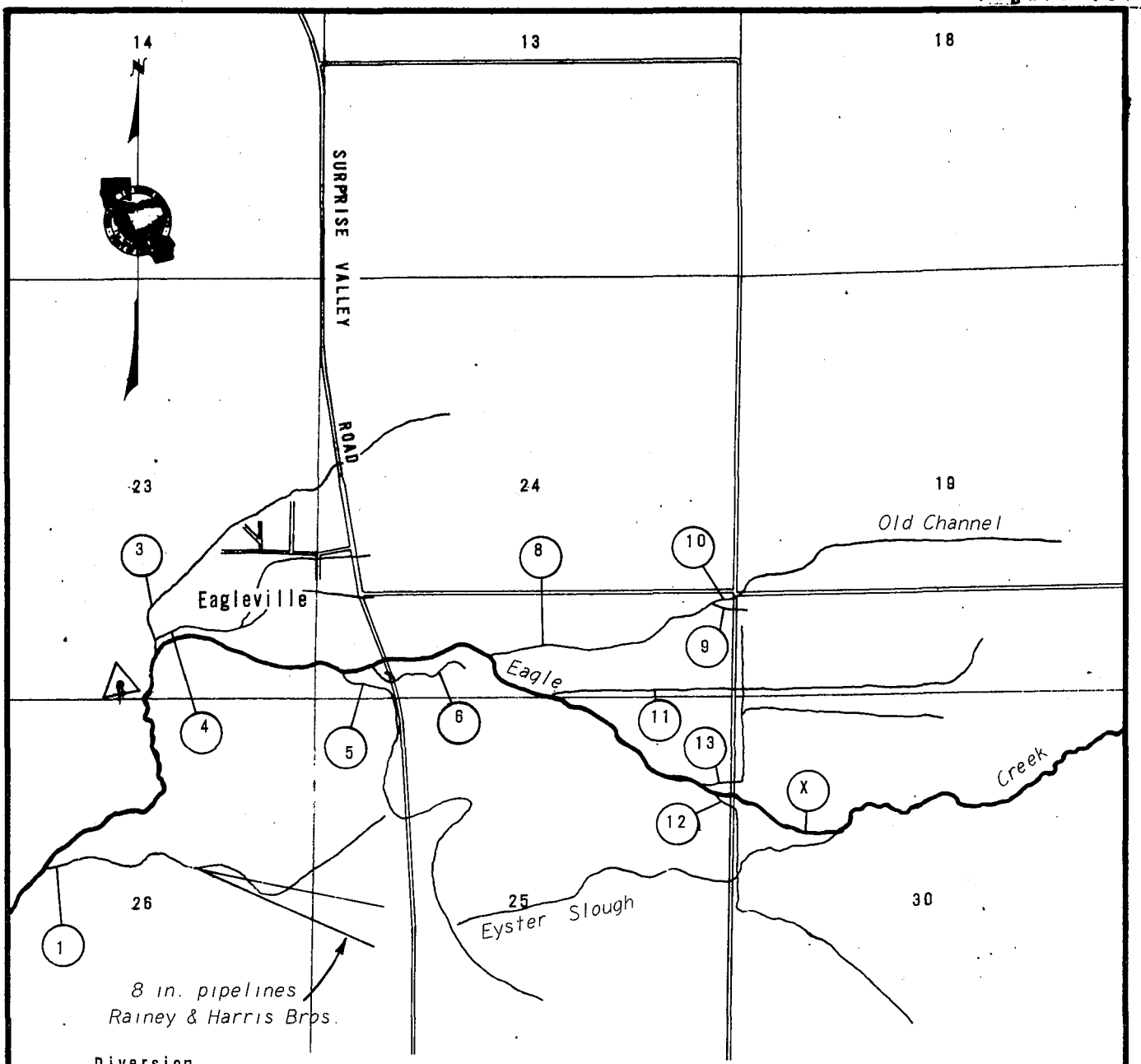
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM RADER CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000

Figure 18i



Diversion Number	Owner	CFS	
1	Harris Bros.	0.41	
	R. Morgan	0.36	
	C. Rainey	0 51	
3	13 Town users	0.98	
	Betford Corp.	5.00	
4	15 Town users	1.36	
	Betford Corp.	1.20	
5	Harris Bros.	0.50	
6, 8	Betford Corp.	2.65	
9	Lazy S J Ranch	0.15	
10	M. Stevenson	3.15	(minus any water recieved from prior collecting ditch)
11	Betford Corp.	0.55	
	Lazy SJ Ranch	1.95	
	J. Grove	0.20	
12	J. Grove	0 70	
	M. Miura	1,20	
13	J. Grove	2.00	
X	Harris Bros.	6.90	(any water over 0.7 cfs from Eyster Slough must be deducted from this)

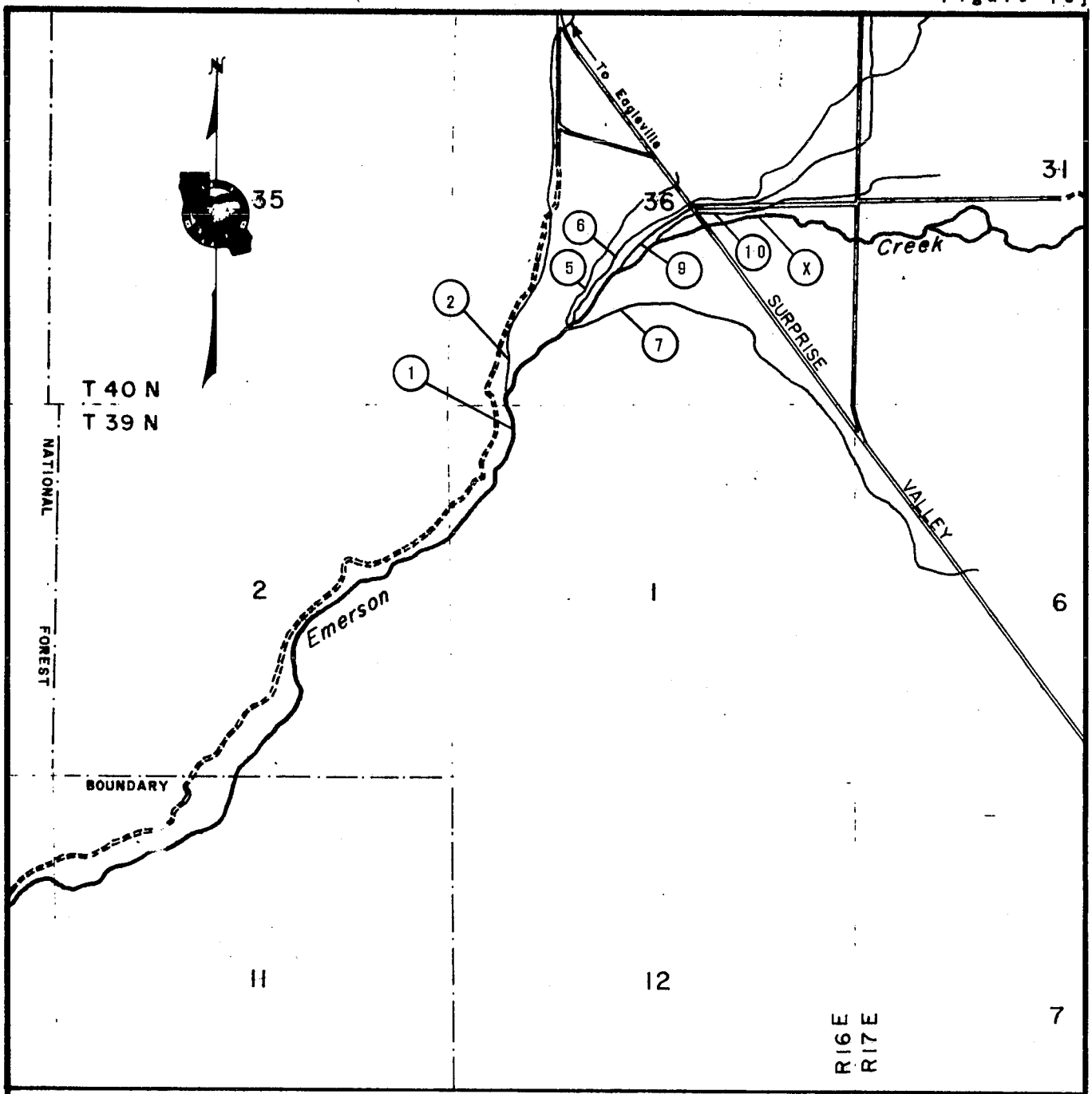
T44N., R16E. M.D.B.&M

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM EAGLE CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale of Miles
0 ½ 1

Figure 18j



Diversion Number	Owner	CFS
1	C. Rainey	2.00
2	Harris Bros	2.00
	D. Romagnoli	0.20
5	J. Biconda	3.30
6	Lazy S J Ranch Inc.	0.60
	J. Miura	2.25
7	E. Berryessa	5.15
9	W. Warren	1.60
10	J. Espil	1.80
X	D. Grove	5.75
	TOTAL	24.65

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM EMERSON CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000

Susan River Watermaster Service Area

The Susan River service area is situated in southern Lassen County in the vicinity of Susanville. The primary area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a distance of about 25 miles. The valley floor is at an elevation of about 4,000 feet. The source of supply is comprised of three stream systems: the Susan River, Baxter Creek, and Parker Creek, with their respective tributaries.

The Susan River originates on the east slope of the Sierra Nevada immediately east of Lassen National Park at an elevation of about 7,900 feet. Its channel runs easterly from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The Susan River has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek, the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank farther downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east slope of the Sierra Nevada, about 10 miles southeast of Susanville. The principal creeks in the system are: Baxter Creek, which rises in the extreme western portion of the basin and flows in an easterly direction, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east slope of Diamond Mountain and flows in an easterly direction for about 5 miles into Honey Lake.

Maps of the Susan River service area, showing the stream systems, diversions, etc., are presented as Figures 19 through 19f, pages 168 through 174.

Basis of Service

The waters of Susan River and its tributaries are distributed in accordance with the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree define the rights to the use of water from the Susan River exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks.

The water of Baxter Creek and its tributaries is distributed in accordance with the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead Creeks and Schedule 4 the rights to the use of water

from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed in accordance with the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker Creek stream systems were added to the Susan River service area on February 16, 1956. There are 160 water right owners in the service area with total allotments of 351.732 cubic feet per second.

Water Supply

The water supply in the Susan River service area is obtained from two major sources, snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than one-half of the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this portion of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation District stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River Channel and commingled with the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation district.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 56 through 60, pages 165 through 167.

Method of Distribution

Irrigation in the Susan River service area is accomplished by placing dams in the main channels, thus raising the water level for subsequent diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and generally much smaller on the various creeks. Wild flooding is the most common method of irrigation in practice. Portions of the irrigated lands have been leveled, permitting a more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas incidental to surface irrigation or as a result of seepage from ditches and creek channels.

The Lassen Irrigation Company is allowed to use its three reservoirs, McCoy Flat, Hog Flat and Lake Leavitt, to store water as follows: (a) between March 1 and July 1 when the flow in the river just above its confluence with Willow Creek is more than 20 cubic feet per second, and (b) at all other times when the flow at the same point is 5 cubic feet per second, in spite of the allotments outlined in Schedules 3, 6, and users of third priority class in Schedule 5 of the Susan River decree.

1972 Distribution

Lester Lighthall, Water Resources Technician II, was assigned as watermaster in the Susan River service area from April 1 until September 30.

The available natural water supply throughout the service area was about 90 percent of average. The cool spring weather delayed much of the runoff which,

along with a rain in the middle of May, contributed to a fair irrigation season.

Parker Creek. The available water supply in Parker Creek was sufficient to satisfy all allotments (four priorities) until May 25. From May 25 to June 25 the flow decreased rapidly to first priority allotments. From June 25 throughout the remainder of the season only first priority allotments were served.

Baxter Creek. The available water supply was sufficient to satisfy third priority allotments (five priorities) until May 20. The flow decreased from May 20 to June 10 when approximately 60 percent of second priority allotments were supplied. The flow at Diversion 75 dropped to 1 cubic foot per second on June 24. In accordance with the decree, all of the flow at this point was diverted into Long ditch for stockwater use. From June 24 for the remainder of the season only stockwater allotments were served.

Lassen-Holtzclaw Creeks. The available water supply in Lassen-Holtzclaw Creeks was sufficient to meet all allotments (two priorities) until May 27. The flow decreased to first priority allotments on June 15. From June 15 throughout the remainder of the season the Tangeman Ranch was entitled to all of the water available in the stream.

Hills Creek. The available water supply in Hills Creek was sufficient to supply all allotments (one priority) until May 25, and all storage facilities on Hills Creek were filled by this date. First priority water declined until August 8 when only stockwater was available to the Amesbury Ranch.

Gold Run Creek. The available water supply in Gold Run Creek was sufficient to supply allotments (three priorities) until May 20. Between May 20 and July 1, the flow decreased steadily. After July 1, the flow remained reasonably constant at about 10 percent of second priority allotments.

Piute Creek. The available water supply in Piute Creek was sufficient to satisfy all allotments (one priority) and provide a small surplus flow to the Susan River throughout the season.

Willow Creek. The available water supply in Willow Creek was sufficient to supply all allotments (two priorities) throughout the season.

Susan River. The available water supply in the Susan River was sufficient to supply all allotments in Schedule 6 (three priorities) until May 27. As the flow receded, Schedule 6 was terminated for the season. All allotments in Schedule 3 (three priorities - Lower Susan River) were satisfied until June 10. Throughout the remainder of the season there was enough water for about 40 percent of second priority allotments in this schedule.

All allotments in Schedule 5 (three priorities - Upper Susan River area) were satisfied until June 10. The flow receded until July 1 when there was enough water for about 15 percent of the second priority allotments. Throughout the remainder of the season the flow remained constant.

Lassen Irrigation Company Reservoirs. The Susan River decree allows the Lassen Irrigation Company's McCoy Flat and Lake Leavitt Reservoirs to store surplus water during the winter and spring months. Once filled, or if a shortage occurs among downstream water right owners, the natural flow in the Susan River above McCoy Flat Reservoir must be released.

During spring runoff these two reservoirs filled to capacity. Shortages began to occur in mid-May and the company requested that its releases to Lake Leavitt from Hog Flat Reservoir begin. Controlled releases began on May 18 and continued until June 18, at which time Hog Flat Reservoir

was emptied. Releases from McCoy Flat Reservoir began on June 19 and continued until August 10, at which time McCoy Flat Reservoir was emptied.

Special Occurrences

On May 11, an upright timber in the dam at R. C. Roberts' diversion 46 broke, but no damage to the downstream users resulted.

Two days later, an upright timber in the dam at Davis' diversions 36 to 39 broke, with only minor damage to R. C. Roberts' dam which had just been repaired. The Davis dam was not used the rest of the season.

On June 22 an upright timber in the dam at diversion 41, which is owned by the Lassen Irrigation District, broke with no damage to the downstream users. Repairs were made and water was again diverted into the A & B Canal within a few hours.

Repairs on the R. C. Roberts dam along with a new Parshall flume were completed in October.

Repairs on Mahle Dam were completed in the spring of 1973.

A new headwall and control gate, along with a measuring weir, were completed in October for Ed Garza on Lower Baxter Creek.

Work was started on a new structure on Bankhead Creek for Ashmore Ranch and should be completed this winter.

SUSAN RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 56

SUSAN RIVER AT SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1	223	101	94	135	89	114	4.9	1
2	260	110	95	117	90	112	6.8	2
3	483	117	100	106	92	108	7.3	3
4	453	136	103	92	95	105	7.9	4
5	376	313	107	82	93	100	11	5
6	314	325	109	76	91	93	8.2	6
7	292	238	103	72	91	87	8.2	7
8	270	195	98	68	90	73	6.6	8
9	285	172	91	60	88	34	6.6	9
10	358	155	88	63	87	21	6.4	10
11	322	162	86	53	86	15	7.6	11
12	296	162	84	48	86	12	12	12
13	284	156	83	41	79	9.7	15	13
14	261	150	86	35	68	10	13	14
15	230	157	87	30	85	9.1	10	15
16	220	157	86	28	102	8.8	8.4	16
17	230	143	84	26	121	9.7	7.0	17
18	237	129	76	23	119	8.2	6.3	18
19	207	120	137	21	116	5.6	6.1	19
20	187	114	171	97	116	4.8	6.1	20
21	181	110	142	103	120	5.8	6.1	21
22	196	110	135	99	125	7.6	6.2	22
23	175	109	148	94	130	12	6.6	23
24	159	114	146	92	133	8.5	7.6	24
25	200	106	142	91	133	5.7	9.5	25
26	152	98	141	90	132	4.3	11	26
27	135	97	139	91	128	5.2	14	27
28	123	103	144	91	125	5.2	18	28
29	115	100	146	90	123	5.3	19	29
30	105	95	142	89	122	5.3	21	30
31	101		141		118	5.3		31
Mean	240	145	114	73.4	106	32.6	9.5	Mean
Runoff In Acre-Feet	14740	8640	7010	4370	6490	2000	564	Runoff In Acre-Feet

TABLE 57

GOLD RUN CREEK NEAR SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1		9.1*	15	19	2.7	1.6	1.4	1
2		9.1	18	18	2.6	1.6	1.5	2
3		9.3	20	17	2.4	1.6	1.5	3
4		9.3	22	14	2.4	1.6	1.6	4
5		20	24	13	2.3	1.6	1.7	5
6		24	25	12	2.2	1.6	1.6	6
7		19	25	12	2.1	1.6	1.6	7
8		15	25	11	2.0	1.6	1.6	8
9		14	25	10	1.9	1.6	1.6	9
10		13	24	10	1.9	1.6	1.6	10
11		13	24	9.8	1.9	1.5	1.6	11
12		12	24	9.3	1.9	1.5	1.7	12
13		11	24	7.8	1.9	1.5	1.7	13
14		11	26	7.3	1.9	1.5	1.7	14
15		11	29	7.0	1.8	1.5	1.6	15
16		11	29	6.8	1.8	1.6	1.6	16
17		11	29	6.6	1.8	1.6	1.6	17
18		11	29	5.9	1.7	1.6	1.6	18
19		11	29	5.8	1.7	1.6	1.6	19
20		11	29	5.4	1.8	1.6	1.6	20
21		11	22	5.2	1.9	1.6	1.6	21
22		11	20	5.0	1.8	1.6	1.6	22
23		11	19	4.7	1.7	1.5	1.6	23
24		12	19	3.9	1.7	1.5	1.6	24
25		12	18	3.6	1.7	1.5	1.6	25
26		12	17	3.3	1.7	1.5	1.6	26
27		13	17	3.1	1.7	1.4	1.7	27
28		15	19	3.1	1.6	1.4	1.7	28
29		16	19	2.9	1.6	1.4	1.8	29
30		16	20	2.8	1.6	1.4	1.7	30
31			19		1.6	1.4		31
Mean		12.8	22.7	8.2	1.9	1.5	1.6	Mean
Runoff In Acre-Feet		761	1400	486	118	95	96	Runoff In Acre-Feet

* Beginning of Record

SUSAN RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

TABLE 58

SUSAN RIVER AT JOHNSTONVILLE BRIDGE

Day	March	April	May	June	July	August	September	Day
1		**	38E	59	1.9	1.3	0.5	1
2			43E	55	2.1	1.3	0.6	2
3			45E	51	2.2	1.3	0.5	3
4			47E	41	2.1	1.3	0.5	4
5			49E	35	2.1	1.3	0.5	5
6			53E	33	2.2	1.3	0.6	6
7			55E	31	2.2	1.3	0.5	7
8			56E	29	1.7	0.9	0.5	8
9			45E	28	1.7	0.7	0.5	9
10			42E	27	1.8	0.6	0.5	10
11			60E	26	1.8	0.6	0.6	11
12			81E	24	2.0	0.5	0.7	12
13			109E	21	1.9	0.4	0.8	13
14		**	68E	16	1.8	0.3	0.7	14
15		98*	66E	11	1.8	0.4	0.6	15
16		94	64E	8.2	1.7	0.4	0.6	16
17		85	68E	6.8	1.7	0.5	0.6	17
18		79	70E	5.4	1.7	0.5	0.6	18
19		66	79E	4.9	1.7	0.5	0.6	19
20		55	105E	4.5	1.8	0.4	0.6	20
21		47	95E	58	1.9	0.5	0.6	21
22		44	76E	3.0	1.8	0.6	0.6	22
23		39E	78E	2.8	1.7	0.6	0.6	23
24		41E	85E	2.3	1.7	0.5	0.6	24
25		37E	80E	2.7	1.7	0.4	0.7	25
26		36E	74E	2.7	1.5	0.3	0.7	26
27		34E	70E	2.6	1.5	0.4	0.7	27
28		38E	64	2.5	1.4	0.4	0.8	28
29		37E	63	2.4	1.3	0.4	0.9	29
30		35E	60	2.3	1.3	0.6	1.0	30
31			60		1.3	0.5		31
Mean			66.0	19.9	1.8	0.7	0.6	Mean
Runoff In Acre-Feet			4062	1190	109	42	37	Runoff In Acre-Feet

* Beginning of Record
** Mean daily flow from April 1 to April 14 was in excess of 100 cfs.
E Estimated mean daily flow from April 23 to May 27.

TABLE 59

WILLOW CREEK NEAR SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1	123	38	22	14	14	19	13	1
2	117	37	20	14	15	19	13	2
3	116	35	20	14	16	19	13	3
4	106	35	18	14	16	19	13	4
5	94	34	16	14	16	20	14	5
6	85	34	16	14	15	20	14	6
7	77	27	16	13	14	19	15	7
8	71	26	15	13	13	18	16	8
9	66	28	14	14	13	18	17	9
10	67	26	14	17	13	18	20	10
11	63	27	15	19	13	14	29	11
12	59	30	16	16	13	13	31	12
13	57	34	17	16	13	12	30	13
14	55	37	17	17	15	12	28	14
15	52	35	16	16	22	12	25	15
16	50	28	15	16	19	12	23	16
17	48	34	15	16	19	13	17	17
18	47	35	15	15	18	13	16	18
19	45	33	15	14	22	13	15	19
20	43	33	18	14	23	13	15	20
21	42	28	22	13	19	13	15	21
22	27	26	25	13	19	13	15	22
23	26	21	26	14	23	13	15	23
24	24	25	26	14	23	13	15	24
25	24	28	24	14	21	13	15	25
26	25	31	22	14	18	12	21	26
27	42	26	20	14	17	12	28	27
28	42	20	17	14	16	13	31	28
29	42	19	16	13	15	13	32	29
30	40	21	15	14	19	12	33	30
31	39		14		19	13		31
Mean	58.5	29.7	18.0	14.6	17.1	14.7	19.9	Mean
Runoff In Acre-Feet	3600	1770	1100	867	1050	904	1180	Runoff In Acre-Feet

SUSAN RIVER WATERMASTER SERVICE AREA

1972 Daily Mean Discharge in Cubic Feet Per Second

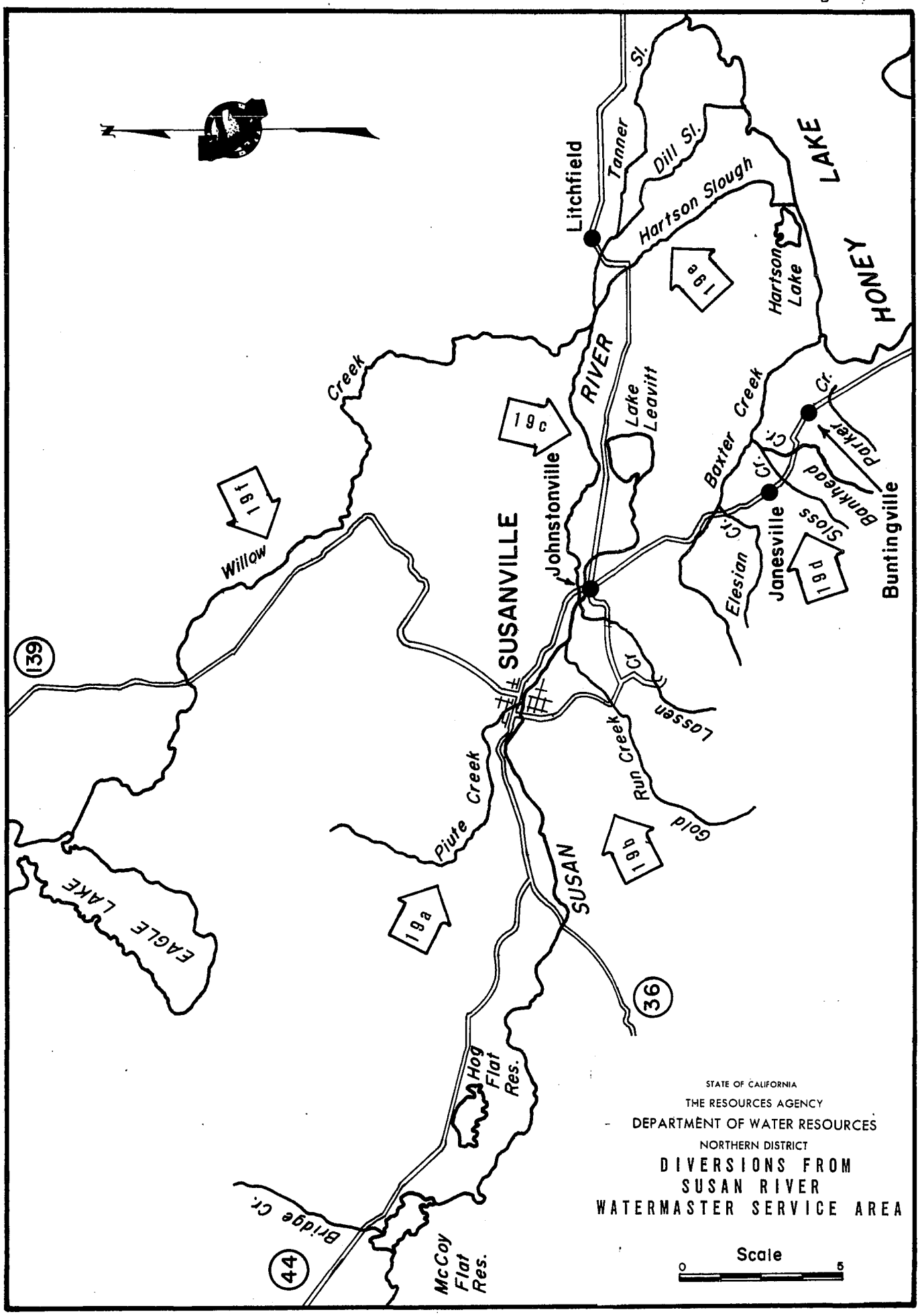
TABLE 60

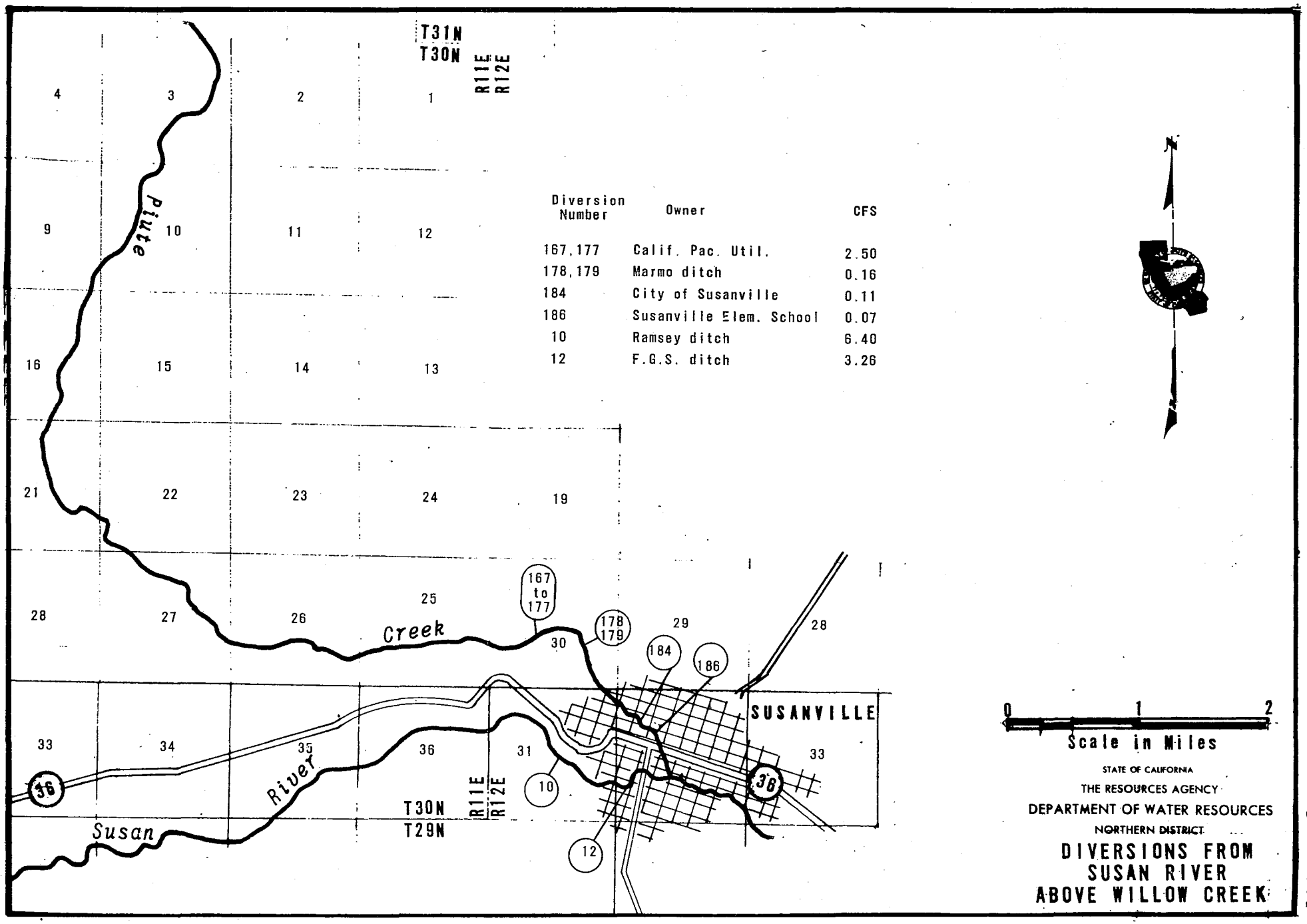
OPERATION OF McCOY AND HOG FLAT RESERVOIRS

Day	McCoy Flat Res. Inflow from Susan River: May	June	McCoy Flat Res. Releases to Susan River: June	July	August	Hog Flat Res. Releases to Susan River: May	June	Transfer of Lassen Irrig. Dist. Water from McCoy Flat and Hog Flat Res. to Lake Leavitt: May	June	July	August	Day
1		21		86	110		48		47	54	84	1
2		20		88	107		45		44	71	93	2
3		18		86	105		43		41	72	93	3
4		17		85	101		40		39	72	92	4
5		16		84	97		36		36	72	91	5
6		14		83	92		32		33	72	89	6
7		13		81	81		27		30	70	83	7
8		11		80	28		23		28	69	75	8
9		9.3		79	7.6 4/		20		25	66	31	9
10		7.5		78	2.6 4/		17		21	64	11	10
11		5.4		79			14		15	63	4.7	11
12		3.5		74			11		10	64	4.3 2/	12
13		2.2		79			9.0		7.0	71	2.8 2/	13
14		1.0 5/		100			7.0		5.0	85		14
15				116			4.0		3.0	101		15
16				112			3.0		2.0	109		16
17				110			2.0		1.0	116		17
18				110		30 3/	1.0 5/		0.0	102		18
19			50 3/	113		58		30 1/	0.0	89		19
20			97	118		58		58	56	104		20
21			91	126		58		58	69	109		21
22			90	125		57		58	43	110		22
23			89	124		58		58	70	112		23
24			88	124		58		58	73	111		24
25			88	125		58		58	73	111		25
26			87	124		57		58	72	109		26
27	31 1/		87	122		58		57	55	109		27
28	29		87	118		58		61	41	81		28
29	27		86	114		56		57	39	70		29
30	25		86	113		54		55	39	75		30
31	23			112		51		54		78		31
Mean	27.0	11.4	85.5	102	73.1	54.9	21.2	55.3	36.3	85.8	58.0	Mean
Runoff in Acre-Feet	268	315	2040	6280	1450	1530	758	1428	2020	5280	1500	Runoff in Acre-Feet

1/ Beginning of Record
2/ End of Record
3/ Beginning of Releases
4/ End of Releases
5/ End of Flow

Figure 19


Litchfield
Tanner Sl.
Dill Sl.
Hartson Slough
LAKE
HONEY
Hartson Lake
19e
Creek
RIVER
Lake Leavitt
19c
Johnstonville
SUSANVILLE
Baxter Creek
Cr.
Cr.
Parker
Bunkhead
Sloss
Janesville
Cr.
Elesian
19d
Buntingville
19f
Willow
139
Cr.
Lassen
Run Creek
Gold
Piute Creek
19b
SUSAN
19a
EAGLE LAKE
36
Hog Flat Res.
Bridge Cr.
44
McCoy Flat Res.
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SUSAN RIVER
WATERMASTER SERVICE AREA
Scale
0
5

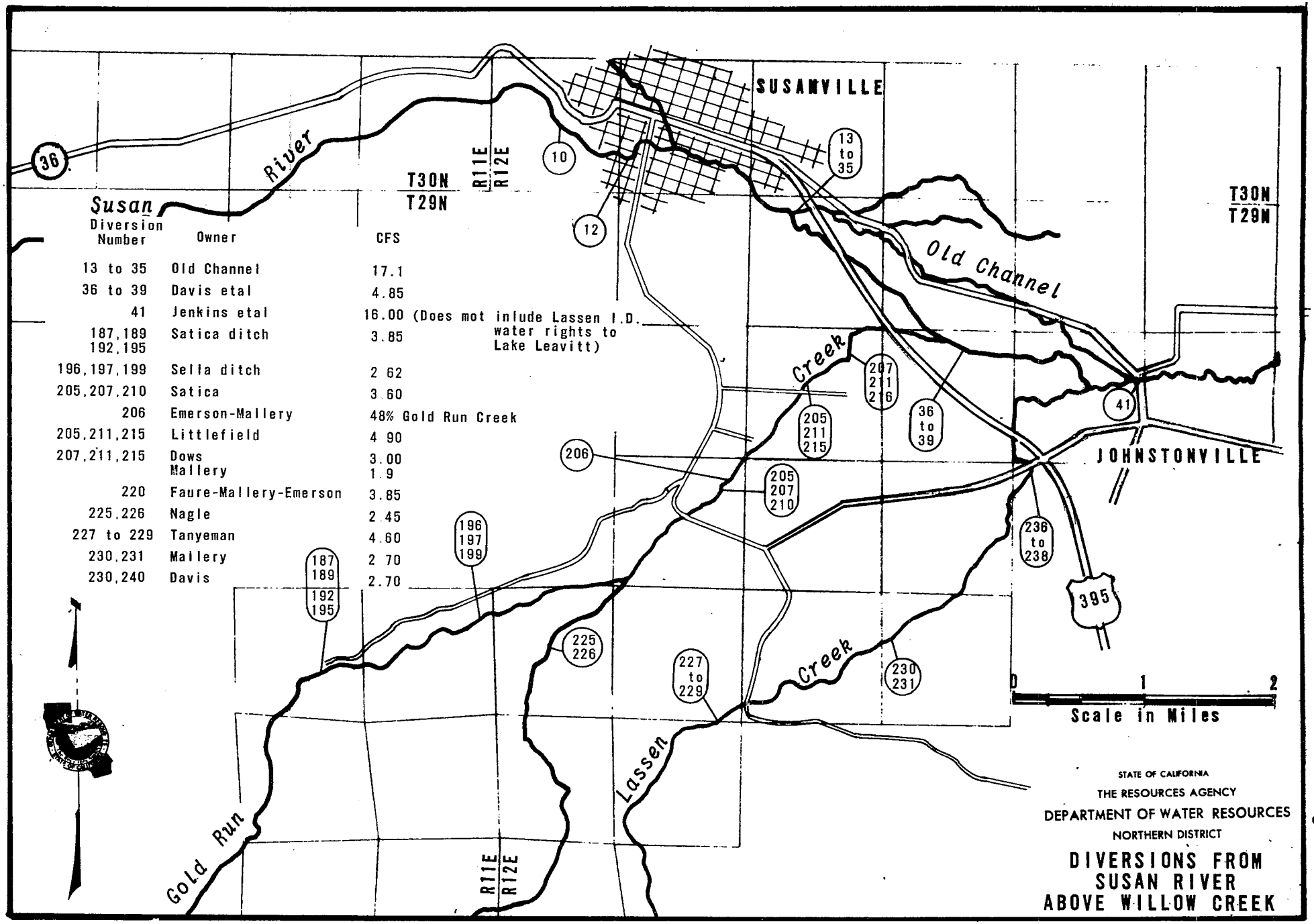


Diversion Number	Owner	CFS
167,177	Calif. Pac. Util.	2.50
178,179	Marmo ditch	0.16
184	City of Susanville	0.11
186	Susanville Elem. School	0.07
10	Ramsey ditch	6.40
12	F.G.S. ditch	3.26

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SUSAN RIVER ABOVE WILLOW CREEK

Figure 19a

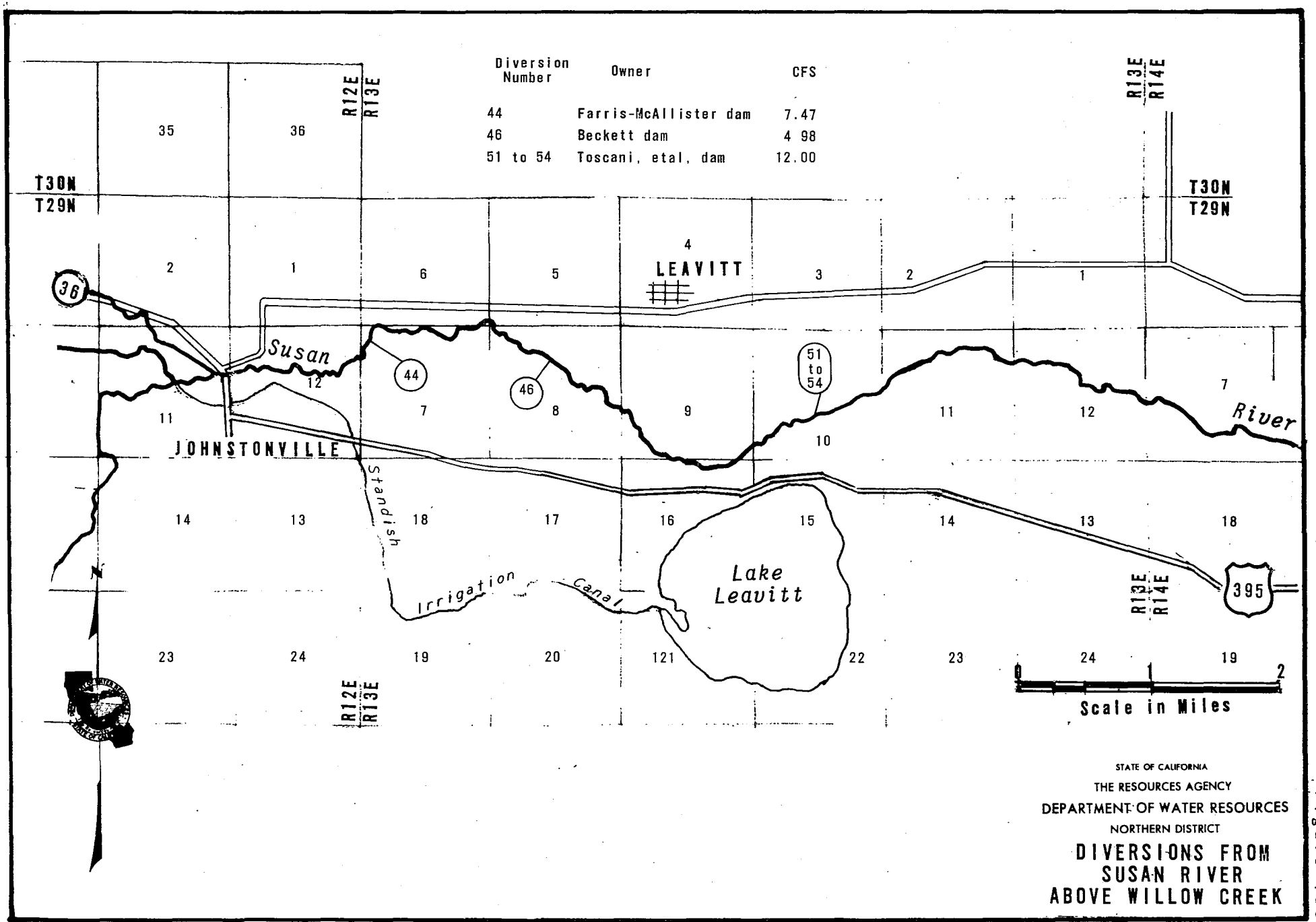


Susan Diversion Number	Owner	CFS
13 to 35	Old Channel	17.1
36 to 39	Davis etal	4.85
41	Jenkins etal	16.00 (Does mot inlude Lassen I.D. water rights to Lake Leavitt)
187,189 192,195	Satica ditch	3.85
196,197,199	Sella ditch	2 62
205,207,210	Satica	3 60
206	Emerson-Mallery	48% Gold Run Creek
205,211,215	Littlefield	4 90
207,211,215	Dows	3.00
	Mallery	1.9
220	Faure-Mallery-Emerson	3.85
225,226	Nagle	2 45
227 to 229	Tanyeman	4 60
230,231	Mallery	2 70
230,240	Davis	2.70

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SUSAN RIVER ABOVE WILLOW CREEK

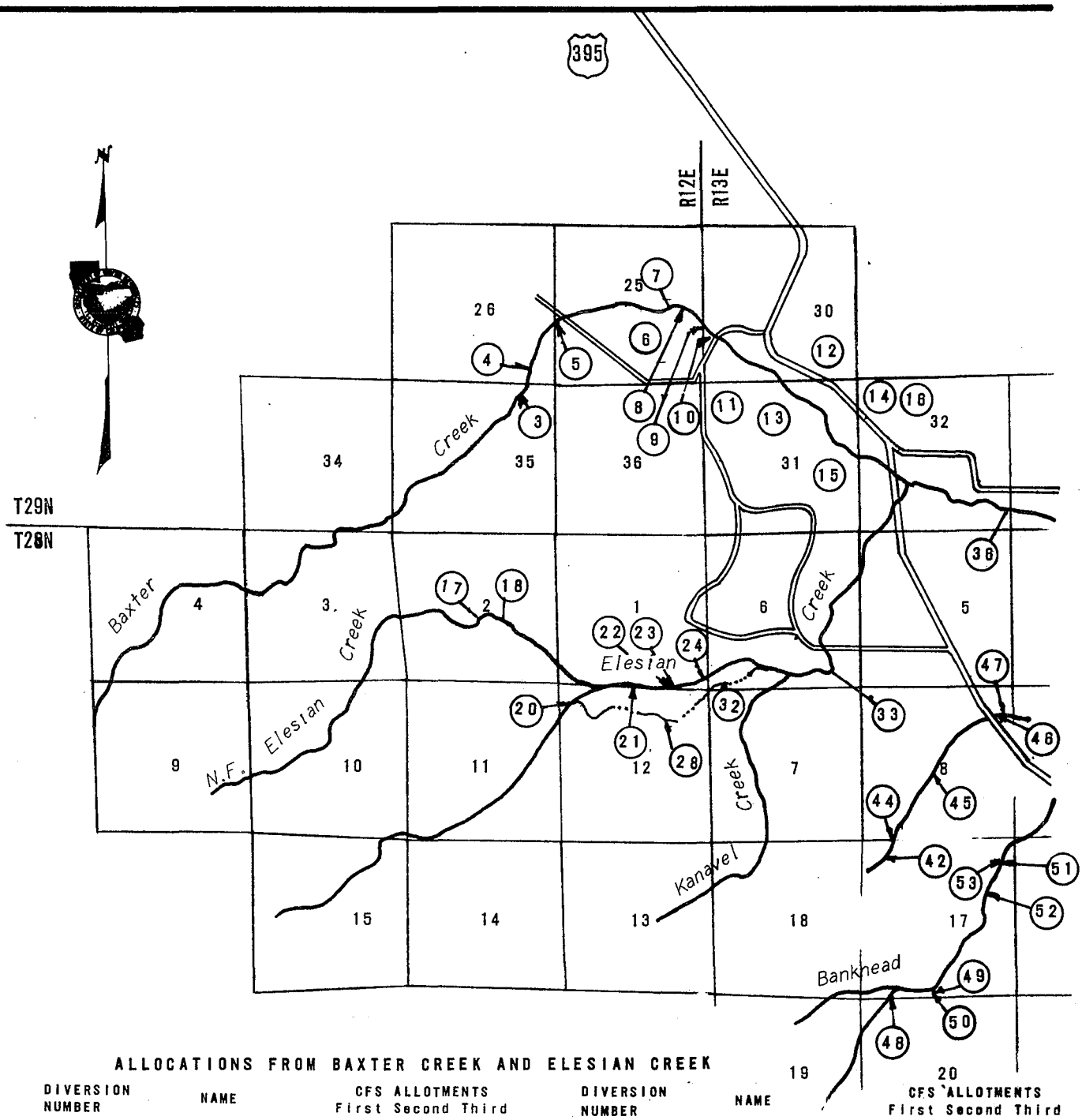
Figure 19b



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SUSAN RIVER ABOVE WILLOW CREEK

Figure 19c

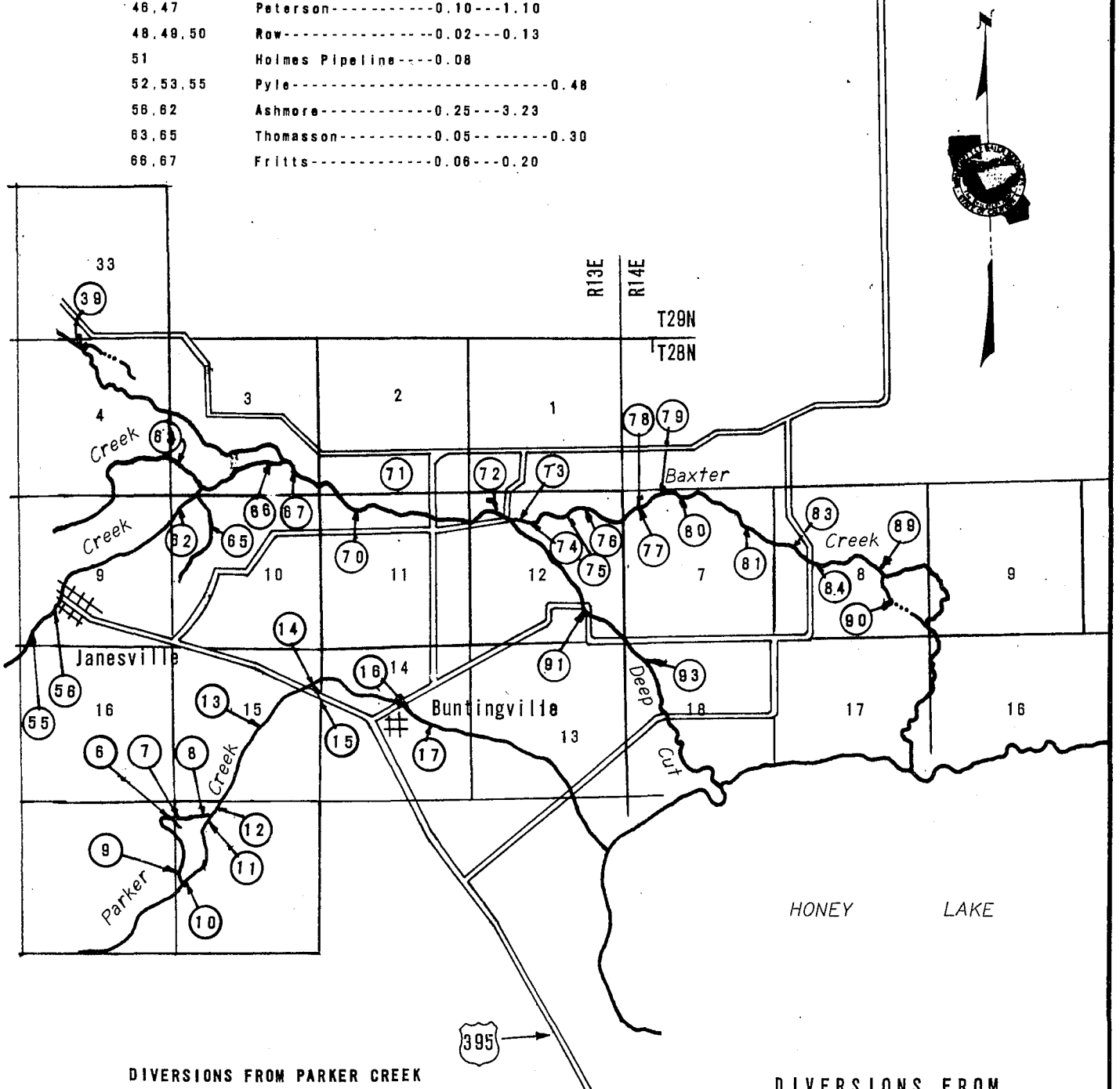


ALLOCATIONS FROM BAXTER CREEK AND ELESIAN CREEK

DIVERSION NUMBER	NAME	CFS ALLOTMENTS First	Second	Third
3,4,5	Ellena	2.50		
6,7,8,10	Gray Eagle Corp	0.68		0.20
11	Burnett, Baker			0.20
8,9,10,12	Griffen	2.80		0.43
8,12,13,) 14,15,16)	Melton	2.52		0.97
16	Gray Eagle Corp	0.10		0.42
17,18	Jack	0.16		
17,21,) 26,27)	Bass	4.10		
17,22,23) 24,28,32) 33)	Kanaval	2.82		
17,22,23) 24,28,32) 33)	Kanaval	4.58		
36,39	Peterson			1.42
70	Ahern	0.02		
71,72	A & K Company	0.02		1.69
75,77) 79,80)	A & K Company			0.84
78	A & K Company			1.05
81,83	A & K Company			2.88
73,75	Garza			0.89--0.28
74,76	Slippey Hemphill			0.98 0.98
75,77	Dieter			1.55--0.40
75,77,80	Dieter			0.30
77,79	Mulroney			0.90--0.90
78	Mulroney			0.67
78	Summings			0.15
81,83	Blankenship			0.50
84,90	Triami Cattle Company			1.80
85,89	Damon, Mc Donald			1.60

ALLOCATIONS FROM SLOSS AND BANKHEAD CREEKS

DIVERSIONS NUMBER	NAME	CFS ALLOTMENTS First	Second	Third
42	Bowersox	0.02		
44	Thornton	0.002		
45	Spears			0.08
46	Grover	0.10	1.10	
46,47	Peterson	0.10	1.10	
48,49,50	Row	0.02	0.13	
51	Holmes Pipeline	0.08		
52,53,55	Pyle			0.48
58,62	Ashmore	0.25	3.23	
63,65	Thomasson	0.05		0.30
66,67	Fritts	0.06	0.20	



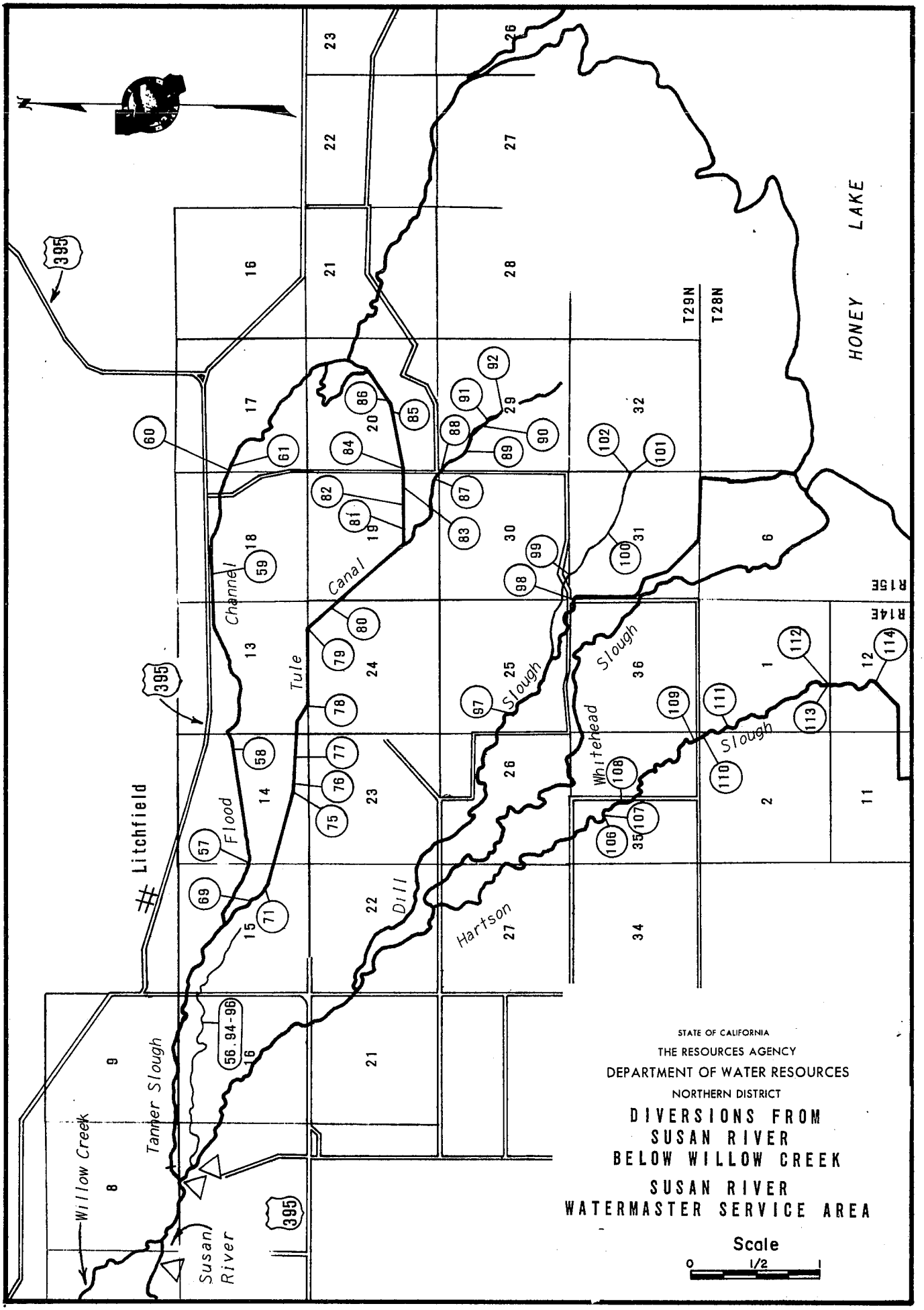
DIVERSIONS FROM PARKER CREEK

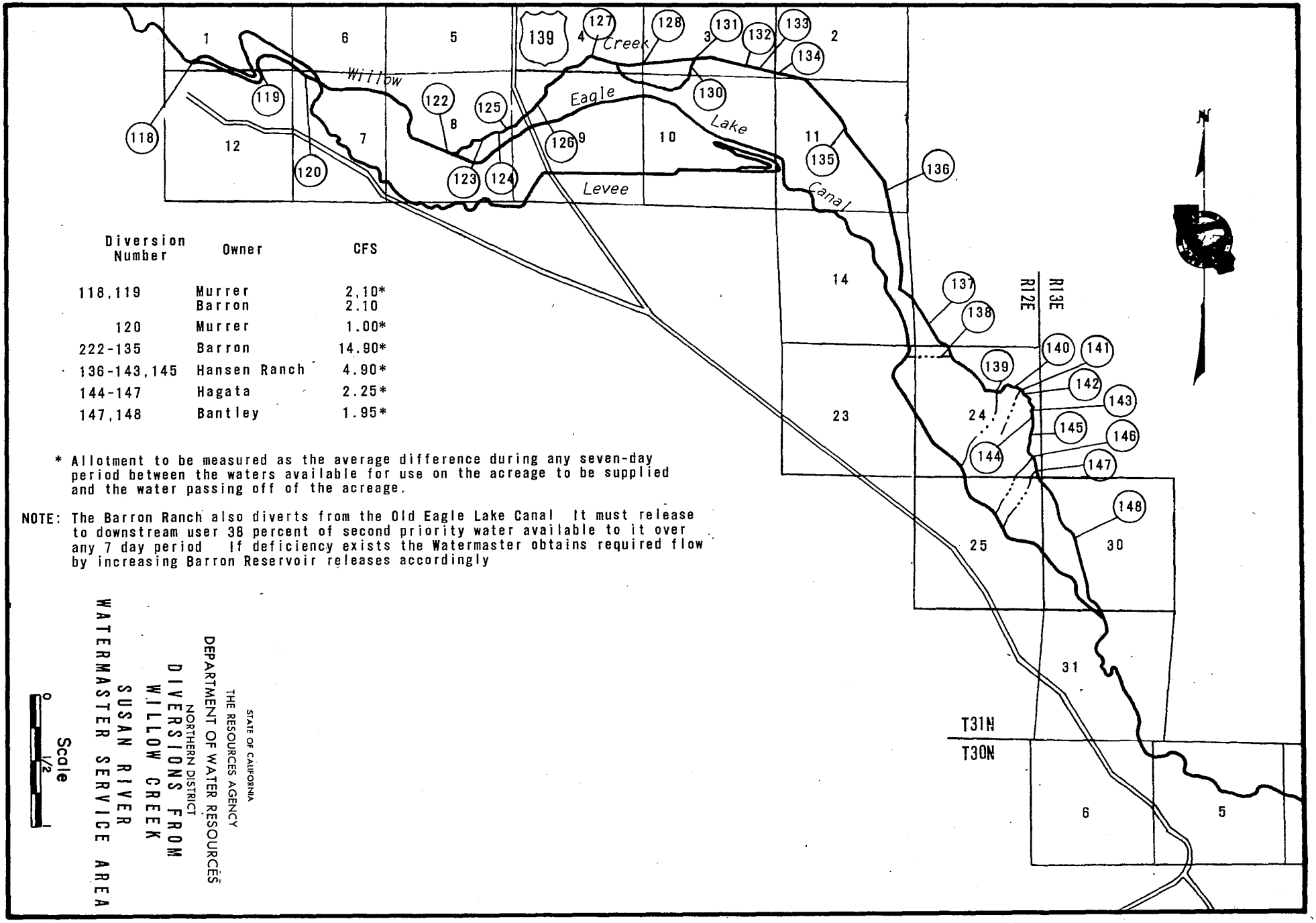
DIVERSION NUMBER	NAME	CFS
6 to 12	George	0.89
13 to 15	Hoffman	3.26
15	Bass	1.38
16 & 17	Bailey	2.06

DIVERSIONS FROM BAXTER CREEK AND PARKER CREEK SUSAN RIVER WATERMASTER SERVICE AREA

Scale 0 1/2 1

Figure 19e


HONEY LAKE
T29N
T28N
R15E
R14E
395
Litchfield
Channel
Canal
Tule
Flood
Slough
Whitehead
Dill
Hartson
Willow Creek
Tanner Slough
Susan River
56, 94-96
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SUSAN RIVER
BELOW WILLOW CREEK
SUSAN RIVER
WATERMASTER SERVICE AREA
Scale
0
1/2



Diversion Number	Owner	CFS
118,119	Murrer Barron	2.10* 2.10
120	Murrer	1.00*
222-135	Barron	14.90*
136-143,145	Hansen Ranch	4.90*
144-147	Hagata	2.25*
147,148	Bantley	1.95*

* Allotment to be measured as the average difference during any seven-day period between the waters available for use on the acreage to be supplied and the water passing off of the acreage.

NOTE: The Barron Ranch also diverts from the Old Eagle Lake Canal It must release to downstream user 38 percent of second priority water available to it over any 7 day period If deficiency exists the Watermaster obtains required flow by increasing Barron Reservoir releases accordingly

STATE OF CALIFORNIA
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DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
WILLOW CREEK
SUSAN RIVER
WATERMASTER SERVICE AREA

Figure 19f

Willow Creek Watermaster Service Area

The Willow Creek service area is situated in Siskiyou County, about 10 miles northeast of Montague. A map showing the Willow Creek stream system, the diversions, and the principal roads in the area is presented in Figure 20, page 179. Willow Creek is the major source of water supply and rises on the west slope of 7,800-foot Willow Creek Mountain east of the service area. It then flows in a northwesterly direction through about 11 miles of rolling hills to its confluence with the Klamath River. The service area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Basis of Service

Willow Creek has had a long history of litigation. However, the present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, to act as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, the Willow Creek watermaster service area was created on June 22, 1972, and service began on July 1, 1972.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply

The main source of water supply of the Willow Creek stream system is from the melting of snow which accumulates at high elevations on the drainage area during the winter months. The spring flow from the melting snow begins late in March or early April and is almost entirely gone prior to June 1. Thereafter the flow decreases rapidly until about July 1. From that date up to the time fall rains begin, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stockwatering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Willow Creek service area. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on flood irrigation by both of these users. Diversion is accomplished by diverting water into the ditches by temporary rock or gravel dams. The lower user in the area utilizes both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1972 Distribution

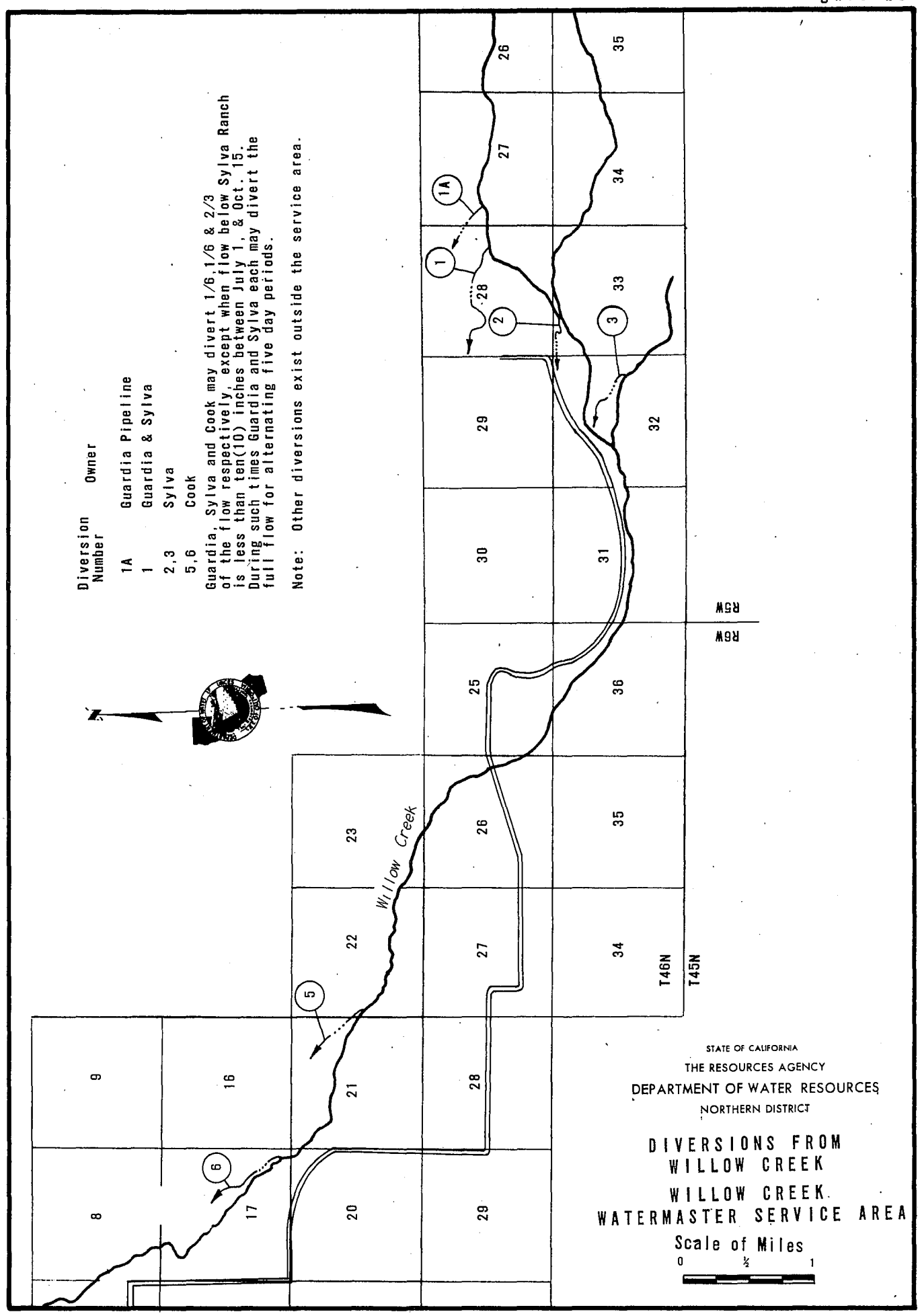
Watermaster service in the Willow Creek service area began on July 1 and continued until September 30. George H. Pape, Associate Engineer, Water Resources, was watermaster during this period.

Since this was the first year that this creek was under watermaster service, there are no records for a basis of comparison of this year's water supply with an average. However, the water users indicated that the supply was somewhat below average.

At the beginning of July there was sufficient water to distribute to all three users according to their fractional

allotments. On July 10 distribution was started on a 5-day rotation between the two upper users since the lower user could no longer put his allotment to beneficial use. This rotation was continued for the remainder of the season.

Figure 20


Diversion Number
Owner
1A Guardia Pipeline
1 Guardia & Sylva
2,3 Sylva
5,6 Cook
Guardia, Sylva and Cook may divert 1/6,1/6 & 2/3 of the flow respectively, except when flow below Sylva Ranch is less than ten(10) inches between July 1, & Oct. 15. During such times Guardia and Sylva each may divert the full flow for alternating five day periods.
Note: Other diversions exist outside the service area.
Willow Creek
T46N
T45N
R5W
R6W
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM WILLOW CREEK
WILLOW CREEK WATERMASTER SERVICE AREA
Scale of Miles
0 ½ 1